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The Polish Central Bank's Policy Response to Economic Challenges Stemming from the the Russia-Ukraine War

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Abstract

The aim of this study is to analyse the actions of the Polish National Central Bank (NBP) in the face of the crisis posed by the Ukraine-Russia war after 24 February 2022. To achieve this, the history of the National Central Bank in Poland, including its traditions, constitutional framework, legal status, main objectives, and areas of focus, will be examined. Additionally, an overview of the monetary instruments at its disposal will be provided first. These will be followed by an examination of the challenges and the impact of the Ukraine war crisis on the Polish economy, focusing on the key economic variables, and most important industries, such as agriculture and energy. Moreover, the impact of the influx of more than 2 million refugees from Ukraine along their accommodation, subsistence and employment will be examined. Additionally, the negative effects of the war in Ukraine on Poland’s economic and financial system, including rising energy costs, slowdown in economic growth, increased inflation and the depreciation of the zloty, will be thoroughly evaluated. This analysis will also assess the measures and instruments implemented by the Polish National Central Bank to mitigate and counteract these phenomena. This paper aims to address how the NBP responded to economic challenges emanating from the war in Ukraine along with monetary instruments it employed (conventional and unconventional), in compliance with the provisions of the Polish Constitution and legal system. In addition, the analysis evaluates the effectiveness of these measures and their contribution to ensure Poland's monetary and financial stability.

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Introduction

The military conflict that broke out between Russia and Ukraine in February 2022 has had far-reaching consequences not only on the political and humanitarian level, but also on the economic side, leading to an intensification of inflationary pressures, an acceleration of energy and food crises and a general deterioration of macroeconomic conditions in many European countries. In this context, Poland has been in a particularly exposed position, both due its geographical location and for its direct involvement in the reception of the Ukrainian population very soon after the initiation of war.

In response to these challenges, the National Bank of Poland (Narodowy Bank Polski – NBP) has played a central role in safeguarding macroeconomic stability, adopting a series of monetary policy measures aimed at countering galloping inflation, mitigating the impact of external shocks and maintaining the confidence of economic agents. The analysis of the institutional and operational response of the NBP in the context of the Russian-Ukrainian conflict offers a significant contribution to the understanding of the role of central banks in periods of systemic crisis and strong international uncertainty.

Founded in 1924 and substantially reformed in the years following the transition to a market economy, the National Bank of Poland is today an independent institution, the functioning of which is guaranteed by the Constitution of the Republic of Poland and the Act on the NBP of 29 August 1997. Its main mission is to ensure price stability, which is pursued via its symmetric inflation target of 2.5%, pursuing the inflation targeting strategy, using wide-ranging monetary policy instruments such as: the interest rates, open market operations, regulation of reserve requirements, as well as, where necessary, intervention in the foreign exchange market. The Monetary Policy Council, the decision-making body of the NBP, sets the guidelines for monetary policy and regularly evaluates its effectiveness, as part of an inflation targeting strategy[1].

The economic and social effects of the conflict have manifested themselves in many fields in Poland. On the one hand, there has been the arrival of over a million Ukrainian refugees, which has led to an expansion in aggregate demand for goods and services, with significant impacts on the labor market and housing. On the other hand, the disruption of supply chains, the increase in commodity prices – especially energy and food – and the intensification of tensions on international markets have led to a general increase in prices, causing inflation to exceed the targeted levels. Added to this, there has been a slowdown in economic growth, accompanied by increased uncertainty and financial volatility.

Against this backdrop, the National Bank of Poland adopted a coherent set of restrictive measures, culminating in a rapid and prolonged series of interest rate hikes starting in autumn 2021, which intensified after the outbreak of the conflict. In parallel, additional tools

[1] https://kipdf.com/bankoteka-exhibition-the-history-of-central-banking-poland-and-the-usa-185th-ann_5b17c15e7f8b9ace338b462d.html

were activated, such as liquidity-sterilizing open market operations, changes to commercial banks' reserve requirements and discretionary foreign exchange interventions, in order to contain the volatility of the zloty and maintaining the stability of the currency. These measures were accompanied by exceptional initiatives, such as the conclusion of currency swap agreements with the National Bank of Ukraine and the implementation of a foreign exchange programme for Ukrainian refugees.

The present thesis aims to systematically analyze the responses of the National Bank of Poland to the economic difficulties that arose following the outbreak of the Russian-Ukrainian war. The argument is divided into three chapters. The first chapter is dedicated to the reconstruction of the institutional role of the NBP within the Polish economic system, with reference to its historical evolution, organizational structure, statutory purposes and the intervention tools at its disposal. The second chapter focuses on the socio-economic impact of the conflict in Poland, analyzing the effect of the influx of refugees, inflationary dynamics, GDP changes and disturbances in the energy market. The third chapter examines in detail the monetary policies adopted by the NBP in the period following the outbreak of the war, with a special focus to the evolution of interest rates, open market operations, regulation of mandatory reserves and currency interventions.

Through an integrated analysis of internal dynamics and institutional responses, this paper aims to add on to the comprehension of the role of central banks in exogenous crisis contexts, offering ideas for a broader reflection on the effectiveness of monetary policy in the presence of complex and prolonged geopolitical and economic shocks.

The Polish Central Bank – its place and role in the Polish institutional and economic system

History and tradition

The Polish banking system and Central Bank until 1989

The National Bank of Poland, as the central bank of the Republic of Poland, is a central and fundamental element of the banking system in the Polish free market economy[2]. The independence of the central bank, guaranteed in the Polish constitutional system after 1989, ensures greater monetary stability, prevents the use of monetary policy to pursue political interests, strengthens the democratic nature of the state and counteracts the concentration of decisions in the hands of the executive power. In the Polish political system, the National Bank of Poland also plays a very important role in relation to the second tier of the banking system created by commercial banks. The high degree of independence of the NBP from the government's actions played a significant role in overcoming crisis and emergency situations, such as the war between Russia and Ukraine that began in 2022.

Since the emergence of the idea of a central bank in the modern history of Poland until the present days of 2025, the functions and position of the central bank have evolved significantly. It is worth noting that despite many obstacles that have occurred in Polish history in the field of political development, significant limitations resulting from the lack of its own state or an imposed political system, in the economic field Poland has followed the path of positive transformations[3].

The roots of the Polish banking system and the beginnings of the central bank date back to the turn of the 18th and 19th centuries (the last years of the existence of the Polish Lithuanian Commonwealth or Kingdom of Poland and the Grand Duchy of Lithuania)[4]. Among the earliest proposals was that, put forward by a famous Warsaw banker Jedrzej Kapostas in the "Plan of Development of the National Bank Project". Kapostas highlighted that banks issuing banknotes had become prevalent across European countries, which were mainly concerned on addressing the shortages in the supply of credit, with banknotes playing a crucial role in providing credit to the economy. Despite, the complexity and innovation of the project the majority of the deputies of the Sejm (Polish Parliament) voted

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[2] Free market economy: an economic system, in which the price of each good and service is determined by its supply and demand, under free trade and competition between producers.

[3] E. Myślak, *Narodowy Bank Polski w systemie ustrojowym Rzeczypospolitej Polskiej*, Kraków 2013, s. 12-13 (E. Myślak, The National Bank of Poland in the political system of the Republic of Poland, Kraków 2013, pp. 12-13)

[4] Z. Krzyżkiewicz, *Tradycje i ewolucja polskiej bankowości*, [w:] W.L. Jaworski (red.), *Współczesny bank*, Warszawa 1998, s. 25. (Z. Krzyżkiewicz, Traditions and evolution of Polish banking, [in:] W.L. Jaworski (ed.), Contemporary bank, Warsaw 1998, p. 25.)

against Kapostas's proposal (1788-1792). Primarily, due to doubts, that notes issuance would in the long run make the country subject to unsustainable public debt[5].

Thirty years later, a breakthrough point occurred in the history of Polish central banking. This took place in the so-called Kingdom of Poland, an autonomous state under the rule of the Russian Tsar, created after the Congress of Vienna in 1815 on a small part of the territory of the former "Kingdom of Poland and the Grand Duchy of Lithuania"[6].

The plans in establishing the first central bank – The Bank of Poland, finally materialized on 6th May 1828, with the founder, named Duke Franciszek Ksawery Drucki-Lubecki, the then Minister of Treasury. Additionally, Count Ludwik Jelski was appointed to be the first Bank's president. The Bank of Poland was not only in charge of issuing banknotes, but particularly in the provision of financial support and loans to the national mining, metallurgy, textile and infrastructural industries. The bank operated as a state-owned institution, financed by the government and located in Warsaw[7]. Therefore, the Bank of Poland conducted not only the issuance of notes but also managed the accounts of the treasury of the State, administered finances for public institutions and was authorized to collect deposits, provide credit and perform investment banking functions. Nevertheless, the Bank of Poland soonly retired from its investment function, as it involved many inconsistencies and resulted in losses to the State's treasury. Because of this, and the lack of large financial institutions in the Kingdom of Poland, in the mid 19th century the Bank of Poland's functions primarily focused on the borrowing activities. Consequently, the bank emerged as the main lending institution in the Kingdom[8].

The binding currency in the Kingdom of Poland was zloty and was put into circulation by the Bank of Poland, starting from 1824. However, very soon, because in 1831 after the lost November Uprising, the Russian authorities led by the Emperor Nicholas I, viewed zloty as politically subversive, leading to the withdrawal of zloty from circulation and subsequent destruction of the banknotes. Followingly, the Russian authorities initiated a gradual reduction of the independence of the monetary authorities of the Kingdom of Poland, announcing the rouble as a new legal tender. Eventually, in 1886 the Bank of Poland was officially dissolved, and all the assets were appropriated by the Russian State Bank[9].

Following the outbreak of World War I, German occupying forces founded the Polish Central Credit Bank (PNCB), to operate within occupied Polish soil. The primary function of this institution included issuing Polish marks, pegged at parity to German marks. After WWI,

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[5] A. Jezierski, C. Leszczyńska, *Historia gospodarcza Polski*, Warszawa 1997, s. 97–98. (A. Jezierski, C. Leszczyńska, Economic history of Poland, Warsaw 1997, pp. 97–98.)

[6] A. Jezierski, C. Leszczyńska, *Bank Polski SA 1924–1951*, Warszawa 1994, s. 13-14 (A. Jezierski, C. Leszczyńska, Bank Polski SA 1924–1951, Warsaw 1994, pp. 13-14)

[7] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

[8] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

[9] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

when Poland regained its independence in 1918, PNCB retained its functions and continued issuing the Polish marks, soon to be replaced by the new zloty, issued by the new institution founded in 1924 – The Bank of Poland SA (SA=joint stock company). The foundation of this institution is of great importance to central banking in Poland, as it has been based on the idea of independence from the government. To materialize this idea, the Bank of Poland SA, was incorporated as a joint stock company, with shareholders, where only 1 percent of the shares was owned by the Treasury of the State. Moreover, the decision making, with regards to monetary reforms changed completely compared to the previous central banking institutions in the Kingdom of Poland. It was no longer the government, which unanimously decided upon the lending and financing activities of the central bank. The Bank of Poland was governed by an Executive Board, consisting of members representing various shareholder constituencies. The Board was responsible for establishing monetary policies as well as appointing the management body. The president of the Bank was nominated by the Council of Ministers and appointed by the President of Poland for the period of five years with the fundamental objective of the bank of ensuring monetary stability[10].

The Bank of Poland SA led by Wladyslaw Grabski, introduced and issued zloty in the reformed denomination, based on a gold standard, to ensure the preservation of purchasing power over time, long-term price stability and its confidence among society. Moreover, the State Treasury issued additional notes and coins, which were also recognized as a legal tender. Following the Parliament approval of a legal act from 1922, the value of 1 zloty was set to 0.29 grams of pure gold[11]. Relatively quickly, however pledging the zloty to a fixed quantity of gold, started to create problems. Just a year later zloty had to be devaluated to address the exchange rate collapse, caused by the excessive printing of banknotes to target the government's budget imbalance[12].

It is worth noting that the Bank of Poland played the main role in financing government investments in the years 1924-1939. For this purpose, at the request of the government, the parliament made appropriate changes to the statute and subordinated it to directives from the Ministry of the Treasury. It can therefore be stated that the Bank of Poland formally remained an issuing bank and a private joint-stock company, but in reality, it was one of the government administration bodies. As a result, until the outbreak of World War II, it was not possible to implement W. Grabski's concept of making the Bank of Poland independent of the government[13].

The Bank of Poland SA operated for almost 15 years, till the beginning of the Second World War on the 1st of September 1939. The bank and the key documentation, together with printing dies and gold reserves were evacuated to London, where the bank and the Polish government in-exile continued its activities. Moreover, the Bank of Poland SA authorities, focused on developing a plan on the functioning of the Bank in Poland after war. In the

[10] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

[11] https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU19220830740/O/D19220740.pdf

[12] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

[13] J. Kaliński, Z. Landau, *Gospodarka Polski XX wieku*, Warszawa 2003, s. 156-157 (J. Kaliński, Z. Landau, The Polish Economy in the 20th Century, Warsaw 2003, pp. 156-157)

occupied Poland during WWII, the Bank of Issue has been established by the Nazi Germany governors (in the so-called "German General Government of Poland"), with its administrative centre in Krakow. Interestingly, the bank continued to issue zlotys, however in a modified form. The occupiers offered the Bank's presidency to Feliks Młynarski, who became the President of the Bank of Issue, after receiving the approval from the Polish London-based government-in-exile. The bank ended its operations at the beginning of 1945[14].

After the end of World War II, when Poland was dominated by the Soviet Union and a communist government was established, the new state bank was the National Bank of Poland, established on 15 January 1945. It had issuing functions. Despite attempts to make it independent of the executive power in 1946-47, from 1948, i.e. the introduction of the Stalinist style in politics and economy, the functions, scope of activities, management system and principles of operation of the NBP were subject to systematic limitation. As a result, it was adapted, especially from 1958, to a centralized and directed model of economic management, characteristic of the economy of real socialism[15].

It was only after the establishment of "Solidarity" in August 1980, as a result of the spreading political and social crisis and the model of central economic management, that the communist government in Poland decided that the method to overcome it must be to change the way of managing, planning and financing the economy. One of the most important planned reforms was the change in the role of banks in the socialist economy. After the adoption of the act on state-owned enterprises and the principles of their financing, it was necessary to create a financial partner for these enterprises in the socialist market, which was to become banks, including a new model of the central bank[16].

On February 26, 1982, a new act on the Banking Law and the statute of the National Bank of Poland were passed. This was a key legal act, which for the first time covered all banks, including the NBP, with regulations. Although it focused on the organization of the banking system, it restored the civil law character of relations between banks and clients. Banks obtained the status of independent entities with legal personality, operating on the basis of acts and statutes. The NBP retained its supervisory function, but banking institutions were given greater freedom in conducting credit policy, with the simultaneous obligation of profitability and accumulation of capital. A broader reform was initiated in 1986 by the establishment of Bank Rozwoju Eksportu SA, which was to support the foreign activity of Polish companies. However, the key stage was the implementation of a two-tier banking system, with the NBP as the central bank. In 1988, it was decided to transfer customer service from the NBP to newly established commercial banks, created from its branches (9 banks in total). From that time on, the NBP focused on three main tasks: issuing money, conducting monetary policy and performing the functions of the state bank and the bank of banks. The new legal order was regulated by the act of 1989, adapting the banking system to

[14] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

[15] R.W. Kaszubski, *Narodowy Bank Polski 1945–1988 – aspekt prawny*, „Bank i Kredyt", 1995, nr 8, s. 11-12. (R.W. Kaszubski, The National Bank of Poland 1945–1988 – legal aspect, "Bank i Kredyt", 1995, no. 8, pp. 11-12.)

[16] E. Myślak, *Narodowy Bank Polski w systemie ustrojowym Rzeczypospolitej Polskiej*, Kraków 2013, s. 50-51 (E. Myślak, The National Bank of Poland in the political system of the Republic of Poland, Kraków 2013, pp. 50-51)

the requirements of the market economy and international cooperation, in accordance with the recommendations of the World Bank[17]. This was a few months before the fall of the communist system in Poland.

National Bank of Poland since 1989

The functioning of the National Bank of Poland, its status, competences and responsibilities after 1989, and of the banking system, were the result of Poland's systemic transformation from a non-democratic country (real socialism) to a parliamentary democracy based on freedom connected with the transition from a planned and centralised economy to a free market economy. The phased transformation of the banking system, including the change in the role of the National Bank of Poland as a central bank, began back in the communist period in the second half of the 1980s, because of the so-called deregulation policy. Nevertheless, this process under the planned economy system and with slowly implemented free market mechanisms, could not be effective, absent democratic background and free market economy principles[18].

The first stage of changes to central banking, which began at the beginning of 1989, ended in 1997 with the adoption of the new Constitution of the Republic of Poland, in which the status of the National Bank of Poland was defined, in the Article 227[19]. Although, there is a wide-ranging acceptance and approval of the main contents of the Article 227, mainly the independence of the NBP as well as its exclusive right to issue notes, there are certain provisions raising controversies. One of these, is the difficulty in holding the President of the NBP accountable for its decision, as will later be explained the President of the NBP can be dismissed only in very few, extraordinary cases, such as via the impeachment under the State Tribunal[20]. Certain political parties argue that such dismissal difficulty gives too much power to the President of NBP, essentially creating a mechanism against the democratic values of the Republic, while other parties highlight the importance of having a politically independent and protected NBP's President[21].

The adoption of the Constitution was followed in the next year (1998) by the Act on Narodowy Bank Polski (NBP), where its responsibilities and competences were specified. The second stage was initiated and lasted several years of Poland's integration with European institutions and accession to the European Union in 2004, as well as the accompanying processes of liberalization and internationalization of the economy. All these factors influenced the formation of a two-tier banking system in Poland. Under this banking system, the NBP is the banks of all banks, concentrating on maintaining the price stability, issuance of notes, maintaining financial stability and holding the responsibility and function of the lender of last resort. Additionally in such a system there are commercial banks that operate as

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[17] H. Gronkiewicz-Waltz, *Bank centralny. Od gospodarki planowej do rynkowej*, Warszawa 1994, s. 103-104. (H. Gronkiewicz-Waltz, Central bank. From planned to market economy, Warsaw 1994, pp. 103-104.)
[18] E. Myślak, Narodowy Bank Polski w systemie ustrojowym Rzeczypospolitej Polskiej, Kraków 2013, pp. 40 (E. Myślak, The National Bank of Poland in the political system of the Republic of Poland, Kraków 2013, pp. 40)
[19] https://www.senat.gov.pl/en/about-the-senate/konstytucja/chapter-x
[20] https://nbp.pl/en/press-releases-opinions-publications/
[21] https://www.obserwatorfinansowy.pl/tematyka/rynki-finansowe/bankowosc/niezaleznosc-banku-centralnego-dlaczego-to-takie-wazne/

financial intermediaries, proving financial services such as granting loans to the general public. Importantly, the central bank does not compete with the commercial banks in its commercial activities[22]. This was accompanied by the progressive evolution and consolidation in the banking services market as a result of the inflow of foreign capital to the financial sector[23].

The first stage from 1989 to 1997 was characterized by rapid changes in the scope of competences of the National Bank of Poland, which from an institution completely subordinated to the executive power in the times of communism, slowly became an equal but independent partner of the government in its economic system transformation process, via monetary policies. This was due to the adoption of the Act on the "National Bank of Poland" on January 31, 1989, which rebuilt the banking system in Poland by increasing the role of the central bank, designated as the central bank of the State and the bank of all other banks[24]. At the same time, the "Banking Law" Act was adopted. Both acts, with subsequent amendments, determined the way in which the Polish central bank functioned and operated until the breakthrough year of 1997, in which the new Constitution and the new Act on NBP have been brought to life[25].

The creation of a two-tier organization of the banking system in Poland in 1989 meant primarily the separation of the issuing and credit functions previously performed simultaneously by the National Bank of Poland. It was transformed into a "typical central bank controlling the process of creating bank money through monetary policy instruments"[26]. This involved the need to define the central bank’s targets and functions. The NBP's basic goal was to strengthen the national currency, which consisted in establishing the appropriate ratio of the rate of change of the money supply to the rate of change in national income. The NBP's functions were redefined, which, apart from the issuance of notes had much broader competences. The NBP's activities included: - issuing and withdrawing licenses to establish banks, supervising the activities of banks, intervening in the case of liquidity shortages of commercial banks[27]. In addition, until 1993, the NBP temporarily performed some operational functions (collecting deposits of individuals, monetary settlements between banks). However, when the National Clearing House was launched in April 1993, and then the Polish Investment Bank, it finally ceased commercial activity[28]. The National Clearing House, a private institution, is now primarily responsible for settling Interbank

[22] https://nbp.pl/wp-content/uploads/2023/01/Central-Bank-Digital-Currency_2021.pdf

[23] J. Rutecka, *Zmiany w polskim systemie bankowym po roku 1989*, „Współczesna Gospodarka” 2017, nr 2, vol. 8, pp. 87-88 (J. Rutecka, Changes in the Polish banking system after 1989, "Współczesna Gospodarka" 2017, no. 2, vol. 8, pp. 87-88)

[24] Ustawa z dnia 31.01.1989 r o Narodowym Banku Polskim, Dz. U. 1989, nr 4, pos.. 22 (Act of 31 January 1989 on the National Bank of Poland, Journal of Laws 1989, No. 4, item 22)

[25] H. Gronkiewicz-Waltz, *Bank centralny. Od gospodarki planowej do rynkowej*, Warszawa 1994, pp. 88-89(H. Gronkiewicz-Waltz, Central bank. From planned economy to market economy, Warsaw 1994, pp. 88-89)

[26] E. Myślak, *Narodowy Bank Polski w systemie ustrojowym Rzeczypospolitej Polskiej*, Kraków 2013, pp.. 42 (E. Myślak, The National Bank of Poland in the political system of the Republic of Poland, Kraków 2013, pp. 42)

[27] W. Baka, *Transformacja bankowości polskiej w latach 1988–1995. Studium monograficzno-porównawcze*, Warszawa 1997, s. 30-32. (W. Baka, Transformation of Polish banking in the years 1988–1995. Monographic and comparative study, Warsaw 1997, pp. 30-32.)

[28] H. Gronkiewicz-Waltz, *Bank centralny. Od gospodarki planowej do rynkowej*, Warszawa 1994, pp. 103 (H. Gronkiewicz-Waltz, Central bank. From planned economy to market economy, Warsaw 1994, pp. 103)

money transfers, which was previously performed by the NBP[29]. Nevertheless, its operations are still regulated by the NBP. On the other hand, the Polish Investment Bank is now in charge of collecting deposits and granting loans to economic agents. After its establishment the NBP no longer pursues any retail activities[30].

The provisions regulated the procedure for appointing and dismissing the President and his competences. This was done by the legislative authority: the lower house of parliament (Sejm) at the request of the Prime Minister. At the same time, the principle of single-person governance of the bank was maintained - it was the President of the NBP who was responsible to the Sejm. The catalogue of matters considered by the NBP Management Board, subject of resolutions, included, among others: NBP's provisions influencing the activity of commercial banks. However, it was the President of NBP who decided on the composition of the Management Board and issued regulations specifying the scope of its activities[31].

According to the Act, the most important document in the field of monetary policy, which the NBP presented, were the aim of monetary policy for a given calendar year. This was submitted by the bank to the Council of Ministers and the Sejm. It was the executive and legislative authorities that gave them their final shape, and the NBP had no influence on determining the final annual inflation target. The inflation target was decided by the Minister of Finance, who confirmed it in the draft of the Budget Act. It can therefore be concluded that based on the 1989 Act, there was de facto a considerable influence of politicians on the operation of the NBP, and thus, the independence of NBP was limited [32].

The main task of the NBP since the establishment of the democratic government in Poland in the 2nd half of 1989, was to stop hyperinflation and systematically reduce inflation, which was critical threat for economic reforms. The key reforms were carried out after 1990. The most radical and impactful reforms came in the Balcerowicz Plan (noteworthy, Leszek Balcerowicz was the first minister of finance in the non-communist government in Poland established in September 1989), which received support from the IMF. The plan included a set of reforms, with the aim to transform the Polish economic system from the command economy to a free-market economy[33]. The reforms have been consulted with international creditors like the Paris and London clubs, as a result Poland managed to negotiate a reduction of its foreign debt. The Act on NBP from 1989 redefined its role, focusing primarily on stabilizing the Polish currency. This is when the NBP started applying its wide-ranging monetary policy tools such as reserve requirements and open market operations to manage inflation rate, which was became a huge problem in the early 1990s reaching an up high of 600% in 1990. Inflation gradually declined, stabilizing under 10% by the late 1990s.

[29] https://bank.pl/wp-content/uploads/2012/06/nbs.2012.07-08.022-023.pdf

[30] https://nbp.pl/wp-content/uploads/2022/05/zarys-historii-polskiej-bankowosci-centralnej.pdf

[31] H. Gronkiewicz-Waltz, *Bank centralny. Od gospodarki planowej do rynkowej*, Warszawa 1994, pp. 103-104 (H. Gronkiewicz-Waltz, Central bank. From planned economy to market economy, Warsaw 1994, pp. 103-104)

[32] R. Kaszubski, *Ewolucja polskiej bankowości centralnej*, „Materiały i Studia NBP" 1994, z. 44, pp. 65. (R. Kaszubski, The evolution of Polish central banking, "Materialy i Studia NBP" 1994, no. 44, pp. 65.)

[33] Free-market economy: an economic system, in which the price of each good and service is determined by its supply and demand, under free trade and competition between producers.

Moreover, in 1990 it became legal to exchange zloty into foreign currencies, leading to a significant dismantling of the black market and increased stability of zloty's exchange rate. At the beginning of 1995, NBP started issuing the new version of zloty with different denominations. The redenomination of the currency (conversion of 10,000 old zlotys to 1 new zloty), simplified transactions and was later considered as a symbol of Poland's economic transformation[34].

In the first years after the Act on the NBP came into force, its activity was focused on various types of activities, including: influencing the price level by influencing the money supply, stabilization of the exchange rate and ensuring a positive real interest rate on term deposits[35]. In general, all the changes taking place in the banking sector in Poland in the years 1989-1997: first and foremost the strengthening of the NBP's position, the creation of several commercial and cooperative banks, the entry of foreign capital into Polish banking and the creation of representative offices of Western banks in Poland, were conducive to the further and accelerated evolution of the role of the National Bank of Poland. Over these years Poland operated under a fixed exchange rate regime, which initially varied dependent on the type of transaction pursued. Nevertheless, later, namely in 1990 was transformed into a single exchange rate irrespective of the transactions' characteristic[36].

From an institution subordinated to the government, the NBP over time became an equal but independent partner of democratic governments after 1989. The central bank has often helped the government via monetary policies to assist on economic reforms, but only when these have not comprised the achievement of the main inflation target. The strengthening position of the NBP in the Polish economic system was also a noticeable trend in the status of central banks in other countries at that time, especially those in Central and Eastern Europe, which after 1989 - like Poland - were transitioning to a free-market economy[37].

The second stage of changes in the functioning of the National Bank of Poland, which established its current legal status, functions and competences, began in 1997, with the adoption of the new Constitution and its Article 227, defining NBP's responsibilities and functions. The gradual introduction of new regulations was caused primarily by the fact that in the second half of the 1990s the positive effects of implementing the Balcerowicz Plan were already known, i.e. a comprehensive systemic transformation in the economic, financial and banking areas[38].

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[34] J. Kaliński, *Transformacja gospodarki polskiej w latach 1989-2004*, Warszawa 2009, s. 61-72 (J. Kaliński, Transformation of the Polish economy in the years 1989-2004, Warsaw 2009, pp. 61-72)

[35] I. Kraś, *Powstanie i status Narodowego Banku Polskiego*, „Seminare" 2006, nr. 3, p. 219 (I. Kraś, The Establishment and Status of the National Bank of Poland, "Seminare" 2006, no. 3, p. 219)

[36] https://www.obserwatorfinansowy.pl/in-english/nineteen-years-of-the-floating-pln/

[37] *Rzut oka na dzieje polskiej bankowości centralnej*, „Biuletyn NBP" 2010, pp. 24-25 (A glance at the history of Polish central banking, "NBP Bulletin" 2010, pp. 24-25)

[38] P. Franka, A. Wisz, *Polityka pieniężna Narodowego Banku Polskiego od roku 1989,* „Kwartalnik Kolegium Ekonomiczno-Społecznego. Studia i Prace" 2015, nr 1, pp. 175 (P. Franka, A. Wisz, Monetary policy of the National Bank of Poland since 1989, "Kwartalnik Kolegium Ekonomiczno-Społecznego. Studia i Prace" 2015, no. 1, pp. 175)

A particularly important impulse towards further strengthening of the NBP was also the ongoing Poland's integration with the European Union, formally initiated in February 1994 with the signing of the Association Agreement (completed in 2004 when Poland officially joined the EU), and especially the recognition by the European Union of the independence of the institutions forming the European System of Central Banks, as provided for in the Maastricht Treaty. The treaty recommendations for EU member states (including potentially new members) in the scope of central bank activities were defined in the form of specific tasks, among which the most important ones concerned maintaining a stable price level, guaranteeing the central bank's independence in the fields of the implementation of monetary policy, as well as the compliance with the ban on financing the budget deficit[39].

The Constitution of the Republic of Poland adopted on 2 April 1997 and then two acts adopted in the following year, the first on the National Bank of Poland, the second under the name of "Banking Law", introduced a new status of the central bank in terms of quality in legal and institutional terms and defined its independence. The new status meant a transition in terms of the main function of the NBP, namely from a central bank influenced and managed by the state to a bank independent from political influences, which has been guaranteed in the new Constitution. The Act on the National Bank of Poland and the "Banking law" came into force on 1 January 1998[40]. The Acts, as the Constitution, were prepared with Poland's imminent accession to the European Union in mind, hence the implementation of many EU regulations in the field of the functioning of the central bank. The National Bank of Poland, after the new Constitution of the Republic of Poland came into force, became a constitutional body as a central bank and a bank of issue[41].

The Act of 1997 defined NBP's main objective of price and financial stability alongside with complementing governmental economic policies, as long as they have not conflicted with the main goal of low and stable inflation. Furthermore, the Act restructured the management of NBP by introducing the Monetary Policy Council, alongside the President and the Management Board. The core functions of the bank included: the issuance of notes, lending to commercial banks, and serving the state's central bank. In 2000, Poland adopted a floating exchange rate regime for the zloty, from a fixed exchange rate, which has been initiated in 1995. Moreover, in 1995 it became possible to trade zloty on the foreign exchange markets and in 2002 the restrictions concerning foreign flows of capital have been abolished. As of today, Poland is not a member of the euro area, but alongside becoming part of the European Union, the National Bank of Poland joined the European System of Central Banks[42].

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[39] R. Kokoszczyński, *Współczesna polityka pieniężna w Polsce*, Warszawa 2004, pp. 213-214. (R. Kokoszczyński, Contemporary monetary policy in Poland, Warsaw 2004, pp. 213-214.)

[40] *Ustawa z dnia 29 sierpnia 1997 r. Prawo bankowe*, „Dziennik Ustaw" 1997, nr 140, pos. 939. *Ustawa z 29 sierpnia 1997 r. o Narodowym Banku Polskim*, „Dziennik Ustaw" 1997, nr 160, pos. 1063. (Act of 29 August 1997 – Banking Law, "Journal of Laws" 1997, No. 140, item 939. Act of 29 August 1997 on the National Bank of Poland, "Journal of Laws" 1997, No. 160, item 1063.)

[41] *Rzut oka na dzieje polskiej bankowości centralnej*, „Biuletyn NBP" 2010, pp. 22-23 (A glance at the history of Polish central banking, "NBP Bulletin" 2010, pp. 22-23)

[42] E. Myślak, *Narodowy Bank Polski w systemie ustrojowym Rzeczypospolitej Polskiej*, Kraków 2013, pp. 193-200 (E. Myślak, The National Bank of Poland in the political system of the Republic of Poland, Kraków 2013, pp. 193-200)

Additionally, one of the 1997 reform introduced the "lender of last resort" function, changing the attitude of the central bank towards commercial banks. Instead of competing with them in the provision of loans a collection of deposits from the public, while at the same time playing the judging and governing rule over their operations, the central bank started to operate vis-à-vis commercial banks. These included the collection of commercial bank's deposits (e.g. via a standing facility) but also borrowing money to banks for example through refinancing operations. Thus, the central bank retained the right to influence the activity of commercial banks[43].

Institutional framework and Monetary Policy Council

The institutional rights and authority of the NBP, as an independent central bank as well as the formulation and implementation of the monetary policy are deeply embedded in the Polish institutional framework. A clear and efficient institutional structure is necessary to ensure the credibility, transparency and effectiveness of the monetary policy actions conducted by the central bank. The status, organs and functions of the National Bank of Poland are regulated by the Constitution of the Republic of Poland adopted on 7 April 1997 (chapter 10, articles 220 and 227), the Act on the National Bank of Poland of 29 August 1997 and the Banking Law also of 29 August 1997 (both entered into force on 1 January 1998). In addition, as a result of Poland's membership in the European Union, the relevant provisions of the Treaty on the Functioning of the EU (TFUE) and the Statute of the European System of Central Banks apply, as mentioned above. It should therefore be emphasised that the National Bank of Poland is a constitutional body, which strengthens its position, independence and role within the legal and financial system within the administration.

First of all, exclusive rights and duties of the NBP are granted by The Constitution of the Republic of Poland in the Chapter 10, Article 227, paragraph 1:

"The central bank of the State shall be the National Bank of Poland. It shall have the exclusive right to issue money as well as to formulate and implement monetary policy. The National Bank of Poland shall be responsible for the value of Polish currency"[44].

Thus, this article gives exclusive and complete power to the NBP over the issuance of notes, as well as the formulation and conduct of monetary policy, noteworthy imposing a duty of ensuring stability of the Polish currency. Moreover, the Act on Narodowy Bank Polski of 29th August 1997 in Art. 3 paragraph 1, slides out specific objectives and targets the NBP should pursue: "The basic objective of the activity of NBP shall be to maintain price stability, while supporting the economic policy of the Government, insofar as this does not constrain the pursuit of the basic objective of NBP"[45].In addition, the Article 227, paragraph 2 of the Constitutions says: "The organs of the National Bank of Poland shall: be the President of the

[43] https://nbp.pl/wp-content/uploads/2022/11/Bankoteka_3_December_2013_internet.pdf

[44] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[45] https://nbp.pl/wp-content/uploads/2023/09/Monetary-Policy-Guidelines-for-2024.pdf

National Bank of Poland, the Council for Monetary Policy as well as the Board of the National Bank of Poland"[46].

President of the National Bank of Poland

The Constitution of Poland Polish Constitution under Article 227 and paragraph 3 ensures the stability in the conduct of monetary policy and of the governing authority – the President of NBP: "The Sejm, on request of the President of the Republic, shall appoint the President of the National Bank of Poland for a period of 6 years"[47]. The President of NBP is appointed for a fixed period of time and can be revoked only in very specific scenarios. This allows to preserve not only the stability within the institution itself but also prevents situations, where every change in government after elections results in changes and political pressure exerted on the NBP.

According to the Polish Constitution, under Art. 227, as previously quoted, the President of the NBP governs the National Bank of Poland "appointed by the Polish Parliament (Sejm), at the request of the President of the Republic of Poland, for a term of six years"[48]. Additionally, anyone is prohibited from holding the office of the Governor of NBP for more than two terms.

To further strengthen the independence of the central bank and its management, the Act on the NBP lists in detail the principles for terminating the term of office of the President. The President of the NBP ends their function after six years (or 12 years), in the event of death, in the event of resignation and in the event of dismissal. The personal independence of the President of the NBP is significantly strengthened by the impossibility of dismissing their from the function, apart from strictly defined cases by law (Article 9, Sections 4 and 5 of the Act on the NBP), i.e.: failure to perform duties due to long-term illness, conviction by a final court judgment for a crime committed, submission of an untrue lustration declaration, as well as a ruling of the State Tribunal prohibiting them from holding managerial positions. In addition, Article 227 Section 4 of the Constitution of the Republic of Poland states that the President of the NBP cannot belong to a political party or a trade union or conduct public activities that are incompatible with the dignity of his/her office, additionally strengthening the independence of the NBP[49].

When analysing the constitutional independence of the President of the NBP and his position in the personal aspect, it should be stated that compared to other constitutional bodies of Poland, such as the President of the Supreme Audit Office (NIK) or the

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[46] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[47] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[48] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[49] R. Sura, *Niezależność Narodowego Banku Polskiego a relacje z Parlamentem RP*, „Przegląd Sejmowy" 2021, nr 4, p. 114 (R. Sura, Independence of the National Bank of Poland and relations with the Parliament of the Republic of Poland, "Przegląd Sejmowy" 2021, no. 4, p. 114)

Commissioner for Human Rights (RPO), their position is slightly weakened due to the lack of formal immunity[50].

There are a numerous of responsibilities that the President of NBP must fulfil. Primarily, these involves "representing the interests of the Republic of Poland in international banking institutions and, unless otherwise determined by the Council of Ministers, in international financial institutions"[51]. Moreover, the Governor of NBP, holds the Chairman position in the Monetary Policy Council of the NBP and the Management board, additionally, is an official representative of the NBP in external affairs[52].

Noteworthy is to mention a bridge between the functions and responsibilities of the NBP's and ECB's Presidents. Both Central Banks have a fundamental objective of maintaining the price stability over the territories defined by the Constitution in Poland and ECB Statute for ECB. Importantly for the ECB this is an undoubtfully more challenging issue, as it involves maintaining price stability in all 20 countries, whereas the NBP has this objective limited to a single country- Poland. The President of the NBP is appointed by the President of Poland and approved by the Parliament for a term of 6 years and is allowed to be re-elected only once. In contrast the President of the ECB is appointed by the European Council for a period of 8 years, which cannot be renewed[53].

Monetary Policy Council

The main directing body of the NBP, is the Monetary Policy Council, established on 7th February 1998. The Council, consists of the President of NBP, and additional 9 members following the writings of Article 227 paragraph 5 of the Polish Constitution: "The Council for Monetary Policy shall be composed of the President of the National Bank of Poland, who shall preside over it, as well as persons distinguished by their knowledge of financial matters - appointed, in equal numbers, by the President of the Republic, the Sejm and the Senate for a period of 6 years"[54]. The Monetary Policy Council is primarily responsible for formulating and structuring the monetary policy aims, as well as reporting to the Polish Parliament once a year the progress in reaching the formulated objectives, such as performance in achieving inflation targets and "the development of targeted monetary aggregates and monetary policy instruments"[55]. Indeed, this responsibility is imposed by Art. 227, paragraph 6 of the Polish Constitution: "The Council for Monetary Policy shall annually formulate the aims of monetary policy and present them to the Sejm at the same time as the submission of the

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[50] R. Sura, *Niezależność Narodowego Banku Polskiego a relacje z Parlamentem RP*, „Przegląd Sejmowy" 2021, nr 4, p. 113-114 (R. Sura, Independence of the National Bank of Poland and relations with the Parliament of the Republic of Poland, "Przegląd Sejmowy" 2021, no. 4, p. 113-114)

[51] https://nbp.pl/en/about-nbp/governor-of-narodowy-bank-polski/

[52] https://nbp.pl/en/about-nbp/governor-of-narodowy-bank-polski/

[53] https://www.ecb.europa.eu/ecb/decisions/eb/html/index.en.html

[54] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[55] https://nbp.pl/en/monetary-policy/mpc-documents/report-on-monetary-policy/

Council of Ministers' draft Budget. Within 5 months following the end of the fiscal year, the Council for Monetary Policy shall submit to the Sejm a report on the achievement of the purposes of monetary policy”[56].

Besides, having to present the monetary policy guidelines and report objectives achievement progress, the Monetary Policy Council is in charge of setting and changing the NBP interest rates, establishing procedures ruling the reserve requirement system and determining the reserve requirement ratio. Furthermore, the MPC defines the principles governing open market operations, determines the limits on the liabilities resting on the NBP, from the borrowing activities from foreign banks and financial institutions. The Council is also responsible for approving the NBP’s financial plans and periodic operational reports and the annual financial accounts of the NBP[57]. Lastly, the Monetary Policy Council oversees the activities of the NBP’s Management Board, particularly its progress in fulfilling the duties constituted in the Monetary Policy Report, submitted to the Sejm[58]. The decision making over these matters is conducted via a voting procedure, during the regular meetings of the Council and the motions or resolutions are voted by a majority vote[59]. To enhance transparency and reliability the NBP, publishes the minutes from each meeting, specifying the subject of each voting session, the voting choice of every member and the results[60]. In addition, organizes, broadcasts, records and publishes press conferences after every meeting[61].

Management Board of the National Bank of Poland

The third body, responsible for overseeing and directing the activities of the National Bank of Poland is the NBP’s Management Board[62]. Just as the Monetary Policy Council, it is chaired by the President of the NBP. Additionally, it consists of six up to eight other Board member, among whom there are two Deputy Governors of the NBP[63]. The Board’s duties concentrate on the implementation and adoption of resolutions voter for at the Monetary Policy Council meetings, as long as the issues that the resolution addresses, do not fall exclusively under the jurisdiction of other NBP bodies[64].

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[56] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[57] https://nbp.pl/en/monetary-policy/monetary-policy-council/

[58] https://nbp.pl/en/monetary-policy/mpc-documents/report-on-monetary-policy/

[59] https://nbp.pl/wp-content/uploads/2025/03/wyniki-glosowania_5.02.2025_ANG.pdf

[60] https://nbp.pl/wp-content/uploads/2025/03/wyniki-glosowania_5.02.2025_ANG.pdf

[61] https://nbp.pl/en/monetary-policy/mpc-decisions/mpc-press-conferences/

[62] https://nbp.pl/en/about-nbp/nbp-management-board/

[63] https://nbp.pl/en/about-nbp/nbp-management-board/

[64] https://nbp.pl/en/about-nbp/nbp-management-board/

The fundamental responsibilities of the Management Board rely on granting licences for banks intending to engage in foreign exchange operations, managing exchange rate policies, conducting regular evaluations "of the circulation of currency and monetary settlements, and also of foreign exchange operations"[65], as well as the supervision of open market operations. Additionally, the Board evaluates the performance of the banking sector, puts into practice operation and financial plan of the NBP, sets fees and commissions charged by the NBP, determining the regulations related to the management of NBP funds, defines the organizational structure and staff and compensation policies of the NBP. Furthermore, the Board prepares and formally approves the NBP's official financial statements, including the income statement, awhile also compiling the national balance of payments. Lastly, it develops and inspects materials and draft resolutions for submission to the NBP's Monetary Policy Council[66].

Independence of the National Bank of Poland

As indicated above, the National Bank of Poland, is governed and managed by three bodies, independent from the central political governing authority. The independence of the President of NBP is guaranteed in Article 227 paragraph 4: "The President of the National Bank of Poland shall not belong to a political party, a trade union or perform public activities incompatible with the dignity of his office"[67].

Moreover, the independence of the Monetary Policy Council and of the NBP Management Board is ensured by Art. 227 paragraph 5: "The Council for Monetary Policy shall be composed of the President of the National Bank of Poland, who shall preside over it, as well as persons distinguished by their knowledge of financial matters - appointed, in equal numbers, by the President of the Republic, the Sejm and the Senate for a period of 6 years"[68].

Additionally, the Constitution guarantees the financial independence of the NBP, by prohibiting the financing of the government budget deficit in Chapter 10, Article 220, paragraph 2: "The Budget shall not provide for covering a budget deficit by way of contracting credit obligations to the State's central bank"[69]. As a result, the Polish Constitution, guarantees, that all the governing bodies are selected via a democratic and fair procedure and that operations of the bank are free from political pressure, exerted by the government.

The above constitutional and statutory provisions on the independence of the National Bank of Poland need to be clarified and expanded, considering the four distinctive types of

[65] https://nbp.pl/en/about-nbp/nbp-management-board/

[66] https://nbp.pl/en/about-nbp/nbp-management-board/

[67] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[68] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

[69] https://www.sejm.gov.pl/prawo/konst/angielski/kon1.htm

independence, that should define a central bank: functional, financial, institutional and political.

The NBP's functional independence is ensured by the Monetary Policy Council, the decision-making body of the central bank, which independently sets annual monetary policy aims and then submits them to the parliament. The NBP also has the statutory ability to freely choose monetary and exchange rate policy instruments, the implementation of which is a significant step towards maintaining price stability in the economy. The NBP's financial independence is ensured by the ban on direct financing of the budget deficit by the central bank, which is provided for expressly in the Constitution of the Republic of Poland. The constitutional provision results in significant changes in the relations between the Council of Ministers and the Minister of Finance on the one hand, and the NBP on the other, because it is impossible, as it was until 1997, to exert any pressure on the central bank in terms of financing the deficit. In turn, the NBP's institutional independence is maintained by minimizing the influence of state officials on the staffing of managerial positions in the central bank, primarily on the part of the Minister of Finance. Neither the Prime Minister nor the Minister of Finance have any powers regarding appointments to the NBP's management staff. These powers have been transferred entirely to democratic bodies elected in general elections: the Sejm, the Senate and the President of the Republic of Poland. The political independence of the NBP has been guaranteed by law and is distinguished by the fact that the term of office of the bank's management board is longer than the term of office of the legislative authority (the Sejm and the Senate), there is no possibility of the government influencing the procedures for electing members of the NBP Management Board and Monetary Policy Council and it is impossible for government representatives to participate with the right to vote in the NBP Monetary Policy Council meetings[70]. The above-defined principle of the political independence of the NBP is consistent with the requirements of the European Central Bank, contained in the statute of the European System of Central Banks.

Functions and targets

Since 2004, (the year when Poland entered EU and had to fulfil all obligations regarding membership in common market and to adopt acquis communitaire on banking system), the main statutory goal of monetary policy is to ensure low and stable inflation in the medium run. By using the medium-term approach NBP recognizes that both macroeconomic and financial shocks, may lead to the divergence of the inflation rate from the targeted boundaries over the short period of time. While remembering that any monetary policy is subject to time lags in-between the implementation of the policy and the effects on economic variables. Concurrently, monetary policies are implemented in a manner which is consistent with pursuing of sustainable economic growth and financial stability. Additionally, to reach the price stability, the Monetary Policy Council utilizes inflation targeting strategy. Starting from 2004, the symmetric inflation target is 2.5% with a permissible deviation of +/- 1%[71]. This monetary policy strategy involves a detailed analysis of relevant macroeconomic

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[70] I. Kraś, *Powstanie i status Narodowego Banku Polskiego*, „Seminare” 2006, nr. 3, pp. 219-220 (I. Kraś, The Establishment and Status of the National Bank of Poland, "Seminare" 2006, no. 3, pp. 219-220)

[71] https://nbp.pl/en/monetary-policy/

indicators, and the announcement of the inflation target to the public. Then, the central bank adjusts the interest rates on a timely basis, to ensure inflation is brought back within the inflation target band as soon as possible, without causing macroeconomic and financial instability[72]. Pursuing of the primary objective of low and stable inflation, requires an effective communication with the general public. Transparency and predictability of the content of NBP monetary policies, improves the predictability and the effectiveness of these policies. To foster transparency the Monetary Policy Council, communicates its policy decision via a wide range of channels such as the publication of Monetary Policy Council meetings minutes, Inflation reports as well as the reports on Monetary Policy, but also the NBP's governor press conferences[73]. Employing such approach to monetary policy allows to effectively anchor low inflation expectations, helping to achieve this inflation target[74].

The effectiveness of the monetary policy is dependent on the appropriate and flexible usage of available monetary policy instruments. Consistent with the Monetary Policy Guidelines, the interest rates are regularly adjusted via a voting procedure by the Monetary Policy Council, after having analysed recent economic situation reports, to ensure the long-term stability of prices. Moreover, the NBP has other instruments at its disposal such as OMOs, which it can employ flexibly, to mitigate economic fluctuations, maintain liquidity in financial markets and respond effectively to emerging crisis's, depending on their nature[75].

The second crucial target of the monetary policy is to maintain sustainable economic growth and financial stability, which is interconnected with the NBP's objective of ensuring long-term price stability[76]. To achieve and maintain financial stability, the Financial Stability Committee, chaired by the Governor of NBP is responsible for macroprudential supervision, "to identify, assess and monitor systemic risk stemming from the financial system" and giving recommendations to take macroprudential policy action in case of financial imbalances[77]. Additionally, the monetary policy, based on the evaluation of macroeconomic and market variables (such as changes in real estate prices) supports macroprudential measures, in the achievement of financial stability and mitigation of systemic risks in the economy[78]. As long as, it is consistent with and does not negatively influence the achievement of the fundamental NBP objective of price stability.

Furthermore, every year the NBP, pursues an operational monetary policy target to keep the interbank interest rate (POLONIA rate) the closest possible to the NBP's determined short-

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[72] https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

[73] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[74] https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

[75] https://nbp.pl/en/monetary-policy/

[76] https://nbp.pl/wp-content/uploads/2024/09/Zalozenia-polityki-pienieznej-na-rok-2025-ANG.pdf

[77] https://nbp.pl/en/financial-system/macroprudential-supervision/financial-stability-committee/

[78] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

term interest rate – the NBP reference rate. Where the POLONIA rate moves within the corridor determined by rate on deposits and the credit rate[79].

Another key objective of the NBP since 2004, has been to prepare and fulfil all the necessary requirements for joining the euro-zone by Poland, following its accession to the European Union. The Monetary policy strategy changed significantly starting from 2003 form that of earlier years. The monetary policy strategy formulated at the end of 1990s to 2003, has focused on reducing the inflation rate, rather than setting a targeted symmetric inflation for each year as starting from 2003. The adoption of inflation targeting strategy was crucial in helping Poland in the fulfilment of conditions for joining the euro-zone presented in detail in the Maastricht agreement and evaluated by the European Commission and the European Central Bank [80]. This agreement put forward numerous convergence criteria in inflation rates, exchange rate stability, public debt levels and government deficits[81].

The inflation rate criteria require the candidate country to have an inflation rate, measured by HICP, to be not higher by more than 1.5%, from the EU's average rate of inflation among three EU countries with lowest Harmonised Index of Consumer Prices. As of 2024, Poland, did not fulfil this criterion[82].

Another criterion of the Maastricht agreement involves the requirement enhancing exchange rate stability of the domestic currency, relative to foreign currencies, for not less than 2 years, in reference to the Exchange Rate Mechanism (ERM2), without major tensions[83]. To meet this criterion Poland must maintain the zloty's exchange rate within a permissible range of +/- 15% around central reference value. Importantly, this criterion is evaluated case by case by the ECB and the European Commission, which does not only consider the exchange rate of zloty in reference to ERM2, but also the overall stability and the "lack of excessive tensions"[84] of zloty on the foreign exchange market. Again, as of today, Poland has not met this accession requirement.

Additionally, Poland must meet the criterion connected to the ratio of public debt to GDP and the government budget deficit. Public debt to GDP, of Poland cannot exceed 60% and the government budget deficit must be lower or equal to 3%[85]. Furthermore, the Treaty also requires the State's national legislation to be consistent with the "compliance duty under

[79] https://nbp.pl/wp-content/uploads/2022/10/en_zal2020a.pdf

[80] https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

[81] https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

[82] https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_3452

[83] https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_3452

[84] https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

[85] https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

Article 131 TFEU"[86]. Similarly, as in previous convergence criterions, Poland has not yet managed to meet these standards.

Lastly, the European Commission, assesses the fulfilment of long-term interest rate criterion, in which the long-term nominal interest rate on the Polish treasury bonds, cannot be more than 2% higher than the EU's average interest rate among the countries in the EU with the lowest HICP's[87]. As in the case of previous convergence criterions, this has also not been met by 2024[88].

Concluding these, Poland, as by 2024, have not managed to meet all the necessary requirements to be able to enter the European Monetary Union and adapt euro as a legal tender and having "an independent monetary policy run by the European Central Bank"[89].

The discussion on the introduction of the Euro in Poland has been ongoing since Poland joined the EU (2004). So far, no Polish government, despite formal obligations resulting from the European Union treaties, has adopted an official date for the introduction of the Euro and it does not seem possible in the near future. Polish public opinion is largely against adopting the Euro. According to a 2024 survey, around 67% prefer to stay with the zloty, while only 27% support the introduction of the common currency[90]. The most frequently cited arguments are political, economic and social, primarily concerns about rising prices, loss of economic sovereignty and deterioration of foreign trade indicators. Most Polish political parties are opposed or sceptical about adopting the Euro in the near future. From the main conservative party Law and Justice and the radical right-wing party Confederation - strongly opposed to adopting the euro, through the centre-left Civic Coalition, which previously supported adopting the euro and currently does not express such a need, to the centrist coalition "Third Way", generally in favour of European integration but cautious about joining the eurozone. The only party that supports adopting the euro, but without indicating a specific time frame, is the social democratic New Left. It should be noted that Poland currently does not meet all the convergence criteria required for adopting the euro (e.g. budget deficit), and public opinion and the lack of political consensus make a change towards adopting the euro unlikely in the medium term. However, some economists argue that adopting the euro could bring economic and political benefits, strengthening Poland's position in the EU[91].

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86 https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_3452

87 https://nbp.pl/wp-content/uploads/2022/10/strategy_beyond_2003.pdf

88 https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_3452

89 https://economy-finance.ec.europa.eu/economic-and-monetary-union/what-economic-and-monetary-union-emu_en

90 https://brusselssignal.eu/2024/04/two-thirds-of-poles-oppose-adoption-of-the-euro-poll-shows/

91 https://i.pl/wprowadzenie-waluty-euro-w-polsce-poznaj-poglady-poszczegolnych-partii-w-tej-kwestii-kto-jest-za-kto-przeciw/ar/c1-17337927

Nevertheless, it is important to emphasize, that Poland, (and all other countries, that joined the EU and have not managed to negotiate an opt-out clause in this matter), while having joined the European Union, have simultaneously "committed to adopt the euro once they fulfil the necessary conditions"[92]. Nevertheless, each country, including Poland, which had and preserved their own national currency after joining the EU, has a full freedom in determining its own approach and timeline for adopting the euro, as the agreement, does not specify and mandate any deadline[93].

Monetary policy instruments

The National Bank of Poland (NBP) has at its disposal a wide range of both conventional and unconventional monetary policy measures. The NBP Is free to flexibly switch between the different monetary policy tools, depending on the characteristic and source of the crisis, brought by imbalances in the financial sector. Additionally, the NBP, must ensure to choose appropriate and suited instruments, by analysing and evaluating the reasons and starting points of a deviation of inflation outside the prescribed band, as to minimise the time of monetary policy transmission, to guarantee the stability in the financial sector and fulfilment of the inflation target[94].

The most important, and the primary monetary policy tool used by the NBP are the interest rates. There are four types of the rates of interest employed by NBP. The short-term interest rate, namely the NBP reference rate, serves as the core instrument of monetary. By change this reference rate the NBP signals its monetary policy stance and sets the yield on the bank's main open market operations[95].

The second interest rate is the deposit rate, which shapes the interest paid to commercial banks by the NBP on their deposited funds with the National Bank of Poland. Simultaneously it determines the floor for POLONIA rate, the overnight interbank rate.

The third interest rate is the Lombard rate, which is the interest paid by commercial banks to the NBP, for obtaining overnight credit from the NBP. Additionally, it sets the ceiling for the interbank rate – POLONIA rate[96]. Fourthly, the discount rate is used to determine the interest to be paid for refinancing loans from commercial banks to entrepreneurs.

The second crucial instrument, used by the NBP are the main open market operations (OMOs), these are the operations that are conducted on a regular basis, usually one time per week, involving the purchasing and selling of the NBP bills, notes and bonds. These usually involve the sale or purchase of NBP bills, with a maturity of 7 days. This instrument allows

[92] https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_3452

[93] https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_3452
[94] https://nbp.pl/wp-content/uploads/2022/10/en_zal2020a.pdf

[95] https://nbp.pl/wp-content/uploads/2022/10/en_zal2016a.pdf

[96] https://nbp.pl/wp-content/uploads/2022/10/en_zal2016a.pdf

the NBP to influence the quantity of money in the economy, namely enabling the central bank to cure liquidity imbalances in the banking sector. OMOs are particularly used, to achieve the previously explained operational target of keeping the interbank interest rate – the POLONIA rate, as close as possible to the reference rate. In its main open market operations, the NBP employs a fixed-rate tender system, where the tender rate is aligned with the NBP's reference rate[97].

Additionally, the NBP conducts structural operations, in case it finds it necessary to adjust the liquidity's long-term position in the banking sector, in order "to ensure the liquidity of secondary market for government securities and government-guaranteed debt securities and to strengthen the monetary policy transmission mechanism"[98]. Structural operations, conducted by the NBP include for example, the bonds and bills issuance and trading debt securities on the secondary market[99].

Moreover, the NBP also uses fine-tuning operations to support the main open market operations, these "involve the issuance of NBP bills with maturities shorter than those applicable to main operations"[100]. These are primarily conducted to stabilise the short-term interest rates. They are carried out "on a semi-regular basis on the last business days of the required reserve maintenance period and on an ad hoc basis on the remaining operational days"[101]. As in the case of structural operations its primary objective is to influence the money supply in the banking sector, in the case of noticeable imbalances. The fine-tuning operations conducted by the NBP involve repurchase transactions (repos) on NBP bills, notes and bonds or simply the sale of debt securities, or proposing reverse repurchase agreements at the time of sale[102].

Another tool, often employed by the NBP, to conduct its monetary policy is the minimum reserve requirement. This allows the NBP, to change the proportion of deposits, on average that commercial banks are required to hold at any point in time on the current account with the NBP in the form of highly liquid assets such as cash. Importantly, the NBP, does not require commercial banks to hold every day funds meeting the required reserves requirement, but requires banks to hold the average amount of funds during the

[97] https://nbp.pl/wp-content/uploads/2024/09/Zalozenia-polityki-pienieznej-na-rok-2025-ANG.pdf

[98] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[99] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[100] https://nbp.pl/wp-content/uploads/2024/08/DKO_WM_Raport_Roczny_Plynnosc_sektora_bankowego_2023_A4_2024_MP_v1.4-EN-INT.pdf

[101] https://nbp.pl/wp-content/uploads/2024/08/DKO_WM_Raport_Roczny_Plynnosc_sektora_bankowego_2023_A4_2024_MP_v1.4-EN-INT.pdf

[102] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

requirement period that is at least as large as the required reserve proportion[103]. This instrument, "contributes to the stability of shortest-term interest rates in the maintenance periods"[104]. Similarly to OMOs, it is used to influence liquidity in the banking system and is very important in achieving the operation goal of keeping POLONIA rate close to the reference rate[105].

Furthermore, the NBP offers lending and deposit services to commercial banks via standing facilities. These are primarily used to limit the changes in the overnight interbank interest rate within the corridor determined by the NBP's lombard rate and NBP's deposit rate.

The first standing facility available for commercial banks is the lombard credit, also called the marginal lending facility. It allows banks to borrow funds from the NBP on an overnight basis. Importantly, for every operation of this type the NBP requires a bank to provide a collateral on the amount borrowed. The assets in the collateral need to be of the type acceptable by the NBP[106].

The second standing facility is the deposit facility, which "allows banks to deposit their liquidity surpluses with the central bank on an overnight basis on each operating day"[107]. As previously described, the lombard rate of interest determines the ceiling and the rate of interest on the deposits with the NBP, the floor for the overnight interbank interest rate, the POLONIA rate.

In addition, the NBP offers bill discount credits "aimed at refinancing loans granted to entrepreneurs by banks"[108]. The interest rate on this type loans is determined by the discount rate. Lastly, the NBP, often engages in activities on the foreign exchange market. It primarily involves buying and selling of zloty, with the main aim being to maintain a stable exchange rate. Additionally, the NBP may conduct foreign exchange swaps, where in the spot market the NBP initially sells or buys the zloty for a foreign currency while repurchasing or reselling it at a later date, after having signed a forward contract [109].

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[103] https://nbp.pl/wp-content/uploads/2024/08/DKO_WM_Raport_Roczny_Plynnosc_sektora_bankowego_2023_A4_2024_MP_v1.4-EN-INT.pdf

[104] https://nbp.pl/wp-content/uploads/2022/10/en_zal2016a.pdf

[105] https://nbp.pl/wp-content/uploads/2024/09/Zalozenia-polityki-pienieznej-na-rok-2025-ANG.pdf

[106] https://nbp.pl/wp-content/uploads/2024/09/Zalozenia-polityki-pienieznej-na-rok-2025-ANG.pdf

[107] https://nbp.pl/wp-content/uploads/2024/09/Zalozenia-polityki-pienieznej-na-rok-2025-ANG.pdf

[108] https://nbp.pl/wp-content/uploads/2022/10/en_zal2023a.pdf

[109] https://nbp.pl/wp-content/uploads/2022/10/en_zal2023a.pdf

Russia-Ukraine war: social and economic consequences in Poland

Overview of the Polish economy

The macroeconomic situation in Poland before the outbreak of the war in Ukraine (end of 2021/beginning of 2022), analyzed on the basis of statistical data and indicators in the field of foreign trade, showed that the Polish economy as a whole, despite the difficult period of the Covid-19 pandemic, maintained a stable position compared to other EU countries, demonstrated strong growth and development trends, recorded one of the lowest unemployment rates in the EU countries and a pro-growth trend in foreign trade. In a word, at the beginning of 2022, Poland showed that it is still heading towards very dynamic development and is one step away from joining the G22 group - the most developed economies in the world (currently ranked 23rd). It can be safely said that it is becoming a medium economic power. A disturbing indicator that emerged was a significant increase in inflation caused by the increase in energy prices due to Russia's gas blackmail[110].

Poland's economic growth measured by the level of real GDP over the last 20 years (since 2000), has increased by 110%, and the current growth trend after the pandemic (6.9% at the end of 2021) is a clear picture of the vitality of the Polish economy. The increase in Poland's real GDP by 110% over the last 20 years was the best result in the entire EU-27, where the average was 35%. This can be applied both to other Central European countries such as Slovakia, Romania and Hungary, where the GDP growth was slightly lower (95%, 98%, 65% respectively), and above all to large Western European countries: Germany (30%), France (23%), Italy (4%), Spain (20%)[111].The Polish economy recorded growth three or five times higher than the latter.

Secondly, over the last 20 years, Poland's average annual GDP growth was over 4%, and the Polish economy was the only one in the EU that did not experience a recession during the global financial crisis in 2009 (an increase of 2.8%) thanks to solid macroeconomic fundamentals, low exposure to banking risks (excellent condition and policy of the central bank) and a flexible exchange rate. Growth data from the end of 2021 indicated that after a difficult period of fighting the Covid-19 pandemic in 2020, when Poland recorded the only decline in GDP in 20 years of history (-2.2%), but still much smaller than the EU-27 average (-5.9%) and other countries of Central and Western Europe, Poland returned to the role of the fastest growing EU economies. The growth data at the end of 2021 showed +6.8% that the Polish economy has rebounded strongly from the Covid-19 pandemic. It was significantly stronger than many Western and Central European countries, as it was the fastest to free itself from gas and oil supplies from Russia, built an export-oriented, competitive and shock-

[110] Paweł Bukowski, Wojtek Paczos, Why is Poland's economy emerging so strongly from the pandemic? A comparison with the UK, 19th May 2021, [online] https://blogs.lse.ac.uk/europpblog/2021/05/19/why-is-polands-economy-emerging-so-strongly-from-the-pandemic-a-comparison-with-the-uk/

[111] World Bank Group, *Polish Economy Returns to Growth Amidst Pandemic-Related Setbacks*, Press Release, 31 March 2021, [online] https://www.worldbank.org/en/news/press-release/2021/03/31/polish-economy-returns-to-growth-amidst-pandemic-related-setbacks

resistant economy and strengthening its position as the engine of economic growth in Central Europe. Poland's advantages were and remain a large and growing economy, a competitive manufacturing sector integrated with German value chains (automotive, electronics), macroeconomic stability and low inflation for most of the period. In addition, prudent fiscal policy, a skilled and relatively cheap workforce with increasing productivity, and an active labor policy and incentives for enterprises contributed to this success[112].

Poland was and remains one of the countries that joined the EU in 2004 that made the best use of its membership in the European Union in terms of economic development. Integration with the EU ensured a massive inflow of structural funds and foreign direct investment (FDI).

The second characteristic of Poland's success is a stable and extensive labor market with low unemployment. At the end of 2021, the unemployment rate according to Eurostat data reached one of the lowest levels since Poland's accession to the EU and was also one of the lowest in the EU-27 (only the Czech Republic achieved a better result) and meant the best result in the last 10 years in the EU (a drop from 10.4 to 2.9%). This result resulted from the high professional activity rate of Poles amounting to 57.8%, one of the highest in the history of the country. Secondly, the rapid recovery of the Polish labor market after the pandemic resulted from an increase in employment, an increase in real wages and a decrease in wage inequality. According to experts, the factors behind low unemployment in Poland are primarily the continuing economic growth, with strong demand for labor in manufacturing and service industries, a flexible labor market, with the widespread use of temporary contracts and the emigration of young people, which reduced the pressure on the domestic labor market[113]. Tax incentives for hiring and state employment support also played a major role. However, challenges were highlighted, such as the low participation of older people and women in the labour market, as well as the persistently high share of temporary contracts compared to other European countries.

At the end of 2021, Poland was among the best EU countries in terms of employment, with a dynamic labor market, very low unemployment and a growing economy. This was especially significant considering that just over a decade earlier, Poland had one of the highest unemployment rates in Europe[114].

The third characteristic of Poland's economic success in recent years, which allowed for a strong rebound after the Covid-19 pandemic, just before the outbreak of the war in Ukraine, was the systematic growth of foreign trade and, above all, the dynamic growth of exports. In the years 2000-2021, Poland went from an economy based on net imports to an almost balanced economy, thanks to the growing competitiveness of exports. During this time, Poland's exports increased by almost 800%, reaching EUR 286 billion at the end of 2021. The increase in exports at the end of 2021 was particularly significant compared to the Covid

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112 Patricia Cullen, *The rise of an underdog: How this European nation is quietly dominating the global stage*, Business Leader, 24 May 2023 [online] https://businessleader.co.uk/content/article/22/The-rise-of-an-underdog:-How-this-European-nation-is-quietly-dominating-the-global-stage

113 B. Bieszk-Stolorz, I. Markowicz, *The Impact of the COVID-19 Pandemic on the Situation of the Unemployed in Poland. A Study Using Survival Analysis Methods*, „Sustainability" 2022, nr 14 (19), 12677 [online] https://www.mdpi.com/2071-1050/14/19/12677

114 P. Lewandowski, I. Magda, *The labor market in Poland, 2000−2021*, [online] https://wol.iza.org/articles/the-labor-market-in-poland/long

year of 2020, which led to a practical balancing of Poland's trade balance. The analysis of the dynamics of Polish exports also shows that Poland had a higher export ratio in relation to GDP than France and Italy and similar to Germany, which confirms its position as an exporting manufacturing power in the EU. Since Poland's accession to the EU, exports to Member States have more than doubled. The EU became the dominant trading partner, accounting for a significant share of Poland's total foreign trade (over 75%), confirming regional economic integration[115].

The main drivers of Polish export growth were integration into EU value chains, especially Germany, and foreign direct investment in industrial sectors. Specialization in production and increased productivity as well as improving the quality of exported goods, i.e. moving from low-value-added goods to more advanced goods, played a very important role. Polish foreign trade has undergone a significant transformation since joining the EU in 2004, with significant growth in exports, increased intra-EU trade and diversification of export destinations. While industrial products still dominate, agricultural exports have also increased. The EU single market has facilitated trade and economic integration, leading to a doubling of exports to other EU Member States[116].

Ukrainian Refugees in Poland

The war between Ukraine and Russia, which started on the 24th February 2022, has brought with itself, a serious shift of the geopolitical landscape in Eastern Europe[117]. It is hard to find any other place, which have faced more direct, immediate and profound repercussion from war as Poland, the Ukraine's western neighbour, sharing a border of over 500 kilometres and a frontline state within NATO and the European Union[118]. Just within one week from the outbreak of war, Poland faced an extremely difficult challenge involving millions of Ukrainians wanting to escape from war and many of them seeking shelter in Poland[119]. As millions of refugees have entered the Polish territory and as the country grappled with unprecedently high security and economic threats, Poland found itself at the epicentre of the economic, political, and humanitarian crisis.

This chapter examines the social and economic consequences of the Ukraine-Russia war on Poland, including the more direct impacts of war, manifesting themselves in the inflow of

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[115] A. Sas, Foreign *trade goods balance after Poland's accession to the EU 2004-2024*, „Statista" 24 February, 2025, [online] https://www.statista.com/statistics/1475114/poland-foreign-trade-goods-balance-after-accession-to-the-eu/

[116] A. Ambroziak, *Poland's Extra-EU Trade After the EU Accession*, „Siyasal: Journal of Political Sciences" Special Issue on Polish Foreign Policy in 21st Century, 2022, p. 117–135 [online] https://iupress.istanbul.edu.tr/en/journal/jps/article/polands-extra-eu-trade-after-the-eu-accession

[117] https://www.osw.waw.pl/pl/wojnanaukrainie

[118] https://ruj.uj.edu.pl/server/api/core/bitstreams/65ee08b7-2185-4c5c-bb39-b40edbb8908c/content

[119] https://www.voanews.com/a/poland-under-pressure-as-over-1-million-refugees-flee-ukraine-/6469675.html

refugees on the Polish economy and the accompanied impact on the Polish labour market and social assistance. In addition, it analyses the more indirect effects of the conflict, resulting in market functioning disturbances, especially in the fields of agriculture and energy. Lastly it shows, how these individual, diverse impacts, have brought changes in macroeconomic variables.

Following the outbreak of the Ukraine-Russia war at the end of February 2022, Poland, without major hesitance, immediately opened its borders and emerged as the main first destination for Ukrainian refugees. In the first three month of war, around 3.5 million Ukrainians have entered Poland, accounting for over 50% of all those who fled the country due to war[120]. After two years of war, the total inflow of Ukrainian refugees by February 2024 to Poland was over 18.8 million, from whom the majority returned to Ukraine, some part moved to another country and the rest decided to settle in Poland[121]. The reason for such a high influx, among others, is mainly the geographical proximity of Poland, historical heritage as the western part of Ukraine was part of the Polish state until the Yalta Conference in 1945, and very importantly shared cultural and linguistic ties of the two countries. Additionally, the existence of a significant migration of Ukrainians to Poland, prior to the start of war, which started at the beginning of XXI century and intensified particularly after the first Ukraine Russia war in 2014. Before the start of 2022 war, Poland was home to around 2 million of foreigners it total, of whom nearly 70% were Ukrainians, including both temporary as well as seasonal workers. Most of these Ukrainians were males, who migrated to Poland, drawn by Poland's strong demand for workers in various sectors of the Polish economy, amid an ageing and declining population[122].

The presence of a significant number of Ukrainians in Poland until 2022 war, has a wide range of implications on the economic and social system in Poland. Primarily, the influx of (previously migrants) and currently mostly refugees have a noticeable effect on the Polish Gross Domestic Product, due to a stimulus to the demand for goods and services, but more importantly to the increased labour supply domestically. Both of these factors contributed positively to the economic growth over the years. Secondly, the increasing inflow of people from Ukraine, positively impacted the balance of payments between Poland and Ukraine, as well as have led to intensified of the international trade between the two countries. However, besides positive effects, there have been also tensions and economic and political conflicts between the countries, which will be later discussed in the "supply side shock" subchapter. In addition, as previously mentioned, the inflow of Ukrainians, have increased the labour supply in Poland, allowing many sectors in the Polish economy, experiencing employee shortages, to fulfil their needs and maximise their productivities.

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[120] https://www.regionalstudies.org/rsa-blog/blog2024poland-has-opened-its-arms-to-nearly-1-million-ukrainian-refugees-but-will-they-be-able-to-stay-for-the-long-term/

[121] https://300gospodarka.pl/news/uchodzcy-z-ukrainy-w-polsce-liczba

[122] https://www.regionalstudies.org/rsa-blog/blog2024poland-has-opened-its-arms-to-nearly-1-million-ukrainian-refugees-but-will-they-be-able-to-stay-for-the-long-term/

Noteworthy, however, is the effect of this human capital inflow on the social security programmes and the participation of the Ukrainians in the Polish Healthcare and Tax system. Moreover, the effect of the increased number of people living in Poland on the situation on the housing market and whether the firms and developers in the housing and flat industry were able to fulfil this risen demand. This is of particular importance, after the outbreak of war in 2022, as before the migrants, primarily consisted of males in their working age, seeking primarily work, while since February 2022, the vast majority of people entering Poland, was comprised of refugees, mainly women and children, primarily seeking shelter. Not of less importance to the Polish economic and social system, was the integration of the Ukrainians with the Polish culture, educational system and society[123].

Ukrainian migrant in Poland until 2022

The first big wave of inflow of Ukrainians to Poland, took place around 2014, following the first Ukraine-Russia war, and improving economic conditions and living standards in Poland, causing an increasing demand for workers in many industries.

Diagram 1: GDP per capita in Poland in years 2000-2014[124]

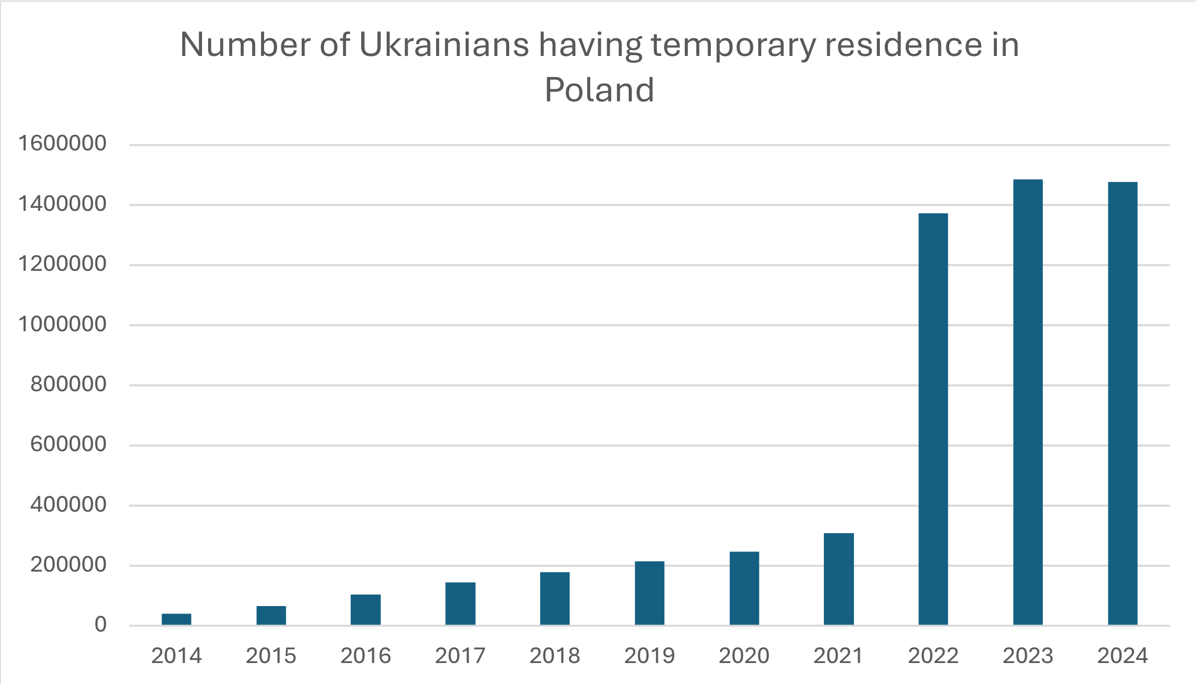
Initially, the Ukrainian migrants, consisted primarily of seasonal workers, only temporarily staying in Poland. Eventually, however there has been an increasing number of migrants,

[123] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

[124] https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2014&locations=PL&start=2000

employed in the industries, for the entire year, on temporary contracts, mostly in position not requiring any higher education. The number of Ukrainian migrants kept increasing very fast since then, slowing down, after the outbreak of the COVID pandemic, after which the number of applications for documents and working permits, came back rising at a higher pace than before. This can be seen, by the number of Ukrainians, holding the temporary residence in Poland document over the years[125].

Diagram 2: Number of Ukrainians holding temporary residence permit in Poland between 2014-2024[126]



It can be very clearly seen that the number of Ukrainians, living in Poland kept increasing over time since 2014. Nevertheless, the most significant and rapid increase happened in 2022, compared to 2021, namely the outbreak of 2022 Ukraine Russia war. The number of Ukrainians living in Poland (over 1,370,000) in 2022 was almost 350% higher than in 2021.

Before 2022, the migration from Ukraine to Poland was mainly temporary and motivated by economic and employment factors. Between 91 and 93% of Ukrainians, who migrated to Poland have worked, more than 50% of them declared the Polish language knowledge, between 40 and 54% of the migrants were women and almost all the migrants from Ukraine were part of the labour force, they were economically active people. It is estimated that only 5% of migrants between 2014 and 2022 were unemployed. In addition, it is noteworthy that the high portion of income earned by the migrants, was send back to Ukraine[127].

[125] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

[126] https://www.gov.pl/attachment/831fe2c9-ecbc-4c06-a9d5-7380e82457ea

[127] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

Ukrainian migrants and refugees after 2022

Since the beginning of Ukraine Russia War almost one million (exactly 998,070 by 25/03/2025) Ukrainian refugees have entered and settled in Poland and nearly 2 million additional refugees have applied for Asylum or other national protection[128]. Unlike the inflow of Ukrainians to Poland before February 2022, the outbreak of war, leading to mass outflow of Ukrainians from Ukraine to Poland was primarily driven by fear of the cruelty of war, by seeking a safe shelter outside from warfare, rather than motivated with employment factors. While before the war only up to 54% of migrants were women, after the outbreak of war, there were up to 80% of women among Ukrainian refugees. Additionally, more than 10% of refugees were people above the age of 60, and only up to 12% of the refugees after 2022 declared knowledge of the Polish language compared to 58% before the war. Moreover 39% of refugees were children, 42% were women above 18 years old and only 19% of refugees consisted of males above 18. Thus, the refugees, entering Poland since 2022, consisted in much lower proportion of males and economically active people (forming the labour force), that could add on to the Polish labour market. Indeed, among the Ukrainian refugees after 2022, only between 70 to 80% were economically active people (belonging to the labour force), compared to 96 to 99% before the war. Furthermore, the unemployment among Ukrainian refugees was between 22-26%, much higher than between 2014 and 2022, where the unemployment was only 5%. Therefore, the employment among the Ukrainian refugees after the outbreak of war is lower than among the migrants between 2014 and 2022, thus the lower participation in the Polish labour market. According to data from 2023, the majority of Ukrainian refugees was employed in simple works. Interestingly however in 2024, around 12% of all firms incorporated in Poland were registered by Ukrainians[129].

Analysing the sectors in which both the migrants, between 2014 and 2022 and refugees after February 2022, were employed in 2024 (based on the Ukrainians registered in ZUS and paying their social insurance contribution in Poland), indicate that the most Ukrainians work in the “administration and support activities”, which is around 20% of all Ukrainians registered, 19% works in the “industrial processing” sector, 13% in the construction market and 12% in the transport industry. If all the Ukrainians are considered, meaning also those not registered in ZUS (Polish Social Insurance Institution), and separated between migrants (2014-2022) and refugees (after 2022), show that the most refugees work in manufacturing (around 22%) and 12% in the retail market. Higher portion of Ukrainian refugees work in hotels, food services and in educational and cultural markets, than the migrants who came to Poland before 2022. Noteworthy, is the strong contribution of Ukrainian employees in selected industries of the Polish labour market. For example, 14% of all employees in the gastronomy and hotel industry are Ukrainian, in all types of markets involved in the provision of services they account for 9% of all employees and in the transport and construction industry, share of Ukrainians among all employees is around 8%. Importantly, these data take

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[128] https://data.unhcr.org/en/situations/ukraine

[129]https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

into account only the migrants and refugees from Ukraine, officially registered with ZUS. Thus, with a high probability their contributions to the Polish labour market are even greater[130].

The aforementioned data clearly indicates a significant contribution and participation of Ukrainians in the Polish labour market and the economy. This is of particular importance for Poland, due to continued economic growth, rising demand for workers among Polish firms. These have increasingly high problems in finding employees, due to the demographic situation in Poland. The demographic situation in Poland does not look good, the fertility rate in Poland in 2023 was one of the lowest in the world[131]. In addition, Poland has a faster and faster ageing population, (in 1950, the median age among the Polish population was 25.8, in 2012 the median age was 38.2). As a result, in the recent years there has been a significant drop in the Polish working age population (which has decreased by 2.6 million, since 2010), and is projected to continuously fall. Some predictions estimate that it will fall by 4.8 million by 2050[132]. Thus, the Polish economy and the labour market, urgently needs employees (one way of fulfilling this need is through migration), to keep up with the current pace of the economic growth in the country. Some projections estimate that the Polish labour market needs additional 2.6 million migrants to keep up and not worsen its worser and worser demographic situation[133].

One of channels through which Ukrainian workers contribute to the increase in Poland's GDP is via a demand stimulus, via fulfilling their needs and wants in the Polish economy, given their holdings and their income. This contribution of Ukrainians is obviously unequal between the migrants and refugees, due to the difference of their inflow motivations, described in previous paragraphs. However, there are certain studies, estimating these contributions, separating the one of pre-war migrants from post-war refugees. According to the NBP's research in 2024 the median income of women refugees was 9% lower from that of women migrants before the start of war, while the median of males' income was lower by 8%. In addition, the funds sent back to Ukraine by the refugees after 2022, is significantly lower, than that of migrants, thus the refugees, spend and consume proportionally more than refugees, which further strengthens the demand stimulus in the Polish economy[134].

There is a wide variety of estimations on the aggregate effect of the Ukrainian refugee's inflow on the Polish economy and the economic growth in the country. For example, according to Deloitte in 2022, the effect of the inflow of refugees from Ukraine, was between

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[130] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

[131] https://www.economist.com/europe/2024/08/22/after-decades-of-decline-polands-population-seems-to-be-increasing

[132] https://data.unhcr.org/en/documents/download/106993

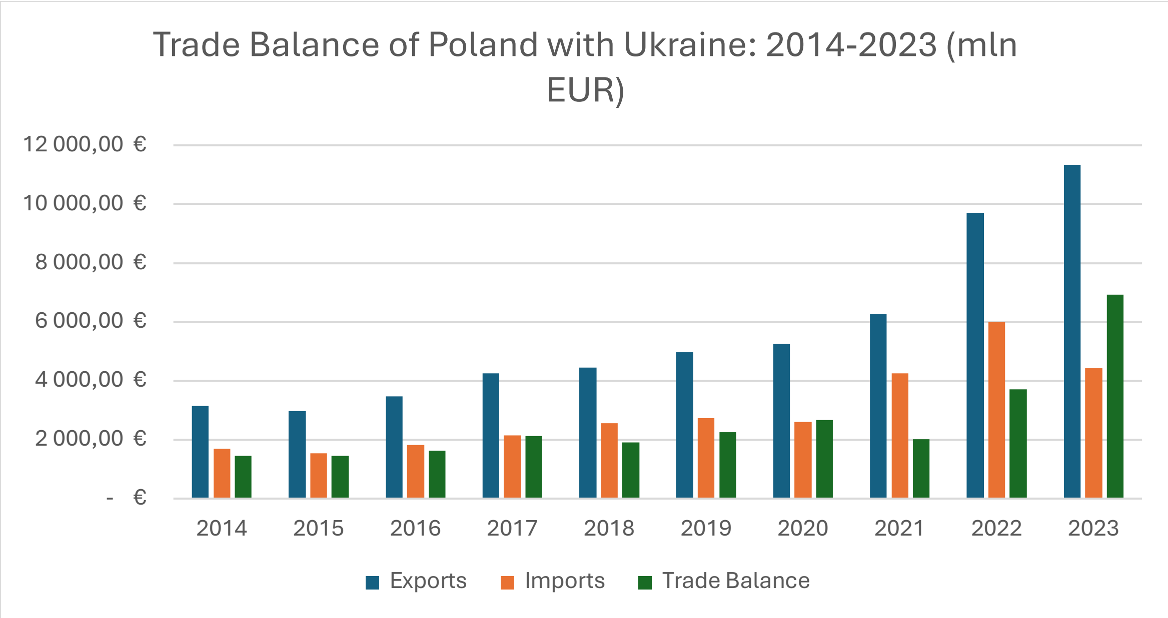
[133] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

[134] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

0.9 to 2.4%, in another estimates of Deloitte and UNHCR in 2024, have indicated, that the refugees in 2022, have increased the Polish GDP, by less, because by 0.5 and 0.8%, while in between 2022 and 2023 by 0.7 and 1.1 percent. Lastly some estimates, predict, that in the long run, thus in between 2030 and 2050, the impact of Ukrainian refugees on the Polish GDP will be higher, amounting from 1.7 to 2.9%. However, this is conditional to the fact, that at least 650 thousand refugees remain in Poland by that time period[135].

Furthermore, the inflow of both migrants and refugees from Ukraine over the year have significantly contributed to the intensification of trade relations between Poland and Ukraine, leading to further increases in the Polish GDP over the years.

Diagram 3: Trade Balance of Poland with Ukraine in years 2014-2023 (in million EURO's)[136]



Very clearly, initially the migrants, and since 2022 the Ukrainian refugees, have significantly contributed to the trade between the countries. Moreover, Poland not only increased its imports from Ukraine over the last 10 years, but more importantly, it has increased its exports and significantly improved its trade balance with Ukraine. The improvement in the trade balance and exports of Poland with Ukraine, was the highest between 2021 and 2022, showing unambiguously the noteworthy impact of war on improving the trade relations between countries, between the aforementioned years, exports to Ukraine have increased by almost 55%, whereas the trade balance by nearly 100 percent! Reaching its highest in 2023, of more than 6 billion Euros[137].

135 https://data.unhcr.org/en/documents/download/106993

136 https://www.trade.gov.pl/aktualnosci/polski-eksport-do-ukrainy-w-latach-2021-2023/

137 https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

Moreover, the inflow of Ukrainians in Poland, also had a noticeable effect on the balance of payments between the two countries. The total amount of transfers, has significantly increased over the years, however, as previously mentioned, the proportion of funds sent by Ukrainian refugees was lower, than that of the migrants between 2014 and 2021. Moreover, the balance of payment of Poland in aggregate terms have also increased, but the aggregate proportion of funds sent outside to Ukraine was previously much higher, back in 2017, among the funds flowing outside Poland, around 90% went to Ukraine, while in the third quarter of 2024, it fell to only 55%. Noteworthy, is the overall trend in the recent years of the Polish net transfers from abroad, as a result of Ukraine-Russia war. While previously, the net transfers from abroad were year by year almost always positive (the inflows of funds to Poland, were much higher than outflows). This was primarily caused by a high portion of Poles working outside the country and sending their money to Poland to their families. The migration, and the inflow of refugees from Ukraine have reversed this trend. It started in 2019, when the net transfers from abroad were less and less positive, to eventually since 2021, become negative[138].

Nevertheless, besides all the positive aspects, that were brought by the inflow of people from Ukraine, there existed high concerns, from such a dynamic and continuous inflow on the housing and flat market in Poland. In particular, whether the housing available in Poland for both renting and purchasing, will be enough to satisfy the sudden rise in demand for this good. The majority of migrants and refugees from Ukraine, decided to rent, rather than buy their own apartment or house in Poland. Due to a rapid growth in demand for housing, right after the outbreak of war, the average renting price of an apartment, between 24th February and 31st March 2022, have increased by around 14%, this trend however lasted in a short period of time. Additionally, according to experts, this significant, but short-term rise in prices, was not caused by apartment owners, rising the price the price they charge from those renting the apartment, but rather due to the characteristics of the apartments, that remained unsold and unrented. These apartments tended to be much bigger and more expensive on average, explaining the sudden rise in average price of rents for the available apartments on the market[139].

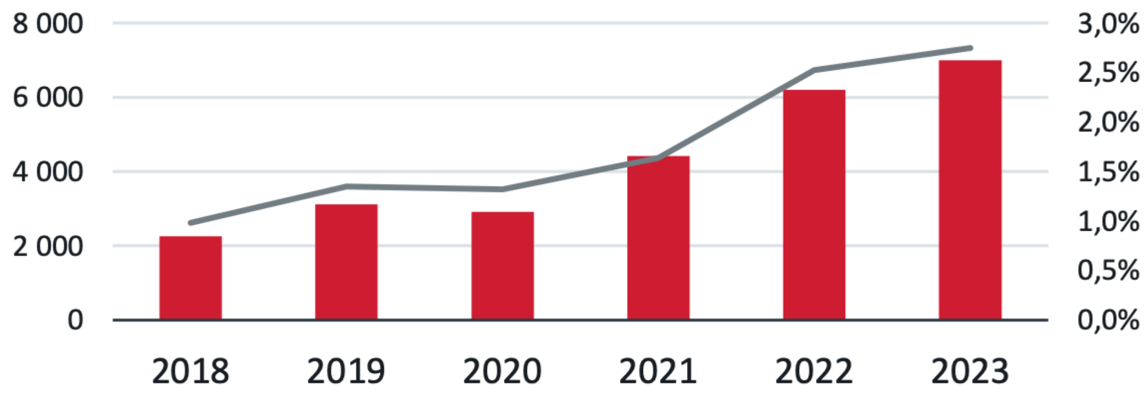
Noteworthy however, is the rise in the participation of Ukrainians in the trading of apartments in Poland, particularly after the outbreak of the war in 2022.

Diagram 4: Number of apartments bought by Ukrainians in Poland between 2018 and 2023[140]

[138] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

[139] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

[140] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf



Red bars: Number of apartments purchased by Ukrainians

Grey line: Share of apartments purchased by Ukrainians in the real estate market trading

Clearly, the share of Ukrainians involved in real estate market trading in Poland was gradually increasing since 2018, alongside with an increase in the total number of apartments bought by Ukrainians in Poland. The highest increase in both of these indicators, took place between 2021 and 2022, thus the impact of war in this case is also indisputable. This data, adds on another area in which the Ukrainians inflow, have led to increased consumption and spending, contributing to the economic growth in Poland over the years, particularly since the beginning of war in 2022.

However, it is important to emphasize, the costs incurred to the Polish government budget from Ukrainian migrants and refugees. To facilitate the inflow of firstly migrants, before 2022 and then the refugees after 2022, Poland has initially in 2016 changed the regulations granting the Ukrainian migrants same rights, as those belonging to the Poles, such as the access to free education, free healthcare and social security programmes (including the "Family 800+ programme": granting every family 800 PLN for each children they have). Followingly, just two weeks after the start of the Ukraine-Russia conflict in 2022, Poland broadened these rights granting regulations to Ukrainian refugees. Importantly, in 2025, due to concerns, regarding the extortion of money from the social security programmes, granted from the regulation in 2022, the authorities seriously consider limiting the access to all the rights granted by these regulations (free education, healthcare and social security programmes) to families who work and pay the taxes in Poland. For example, in 2024 more than 2.8 billion zlotys was distributed under the "Family 800+ programme" to Ukrainian families, accounting for 4% of aggregate amount of funds distributed under the programme. However, the data concerning the total tax and ZUS (Polish Social Insurance Institution) contributions of Ukrainians to the Polish budget, shows that for every 1 zloty received from the "Family 800+ programme" Ukrainians have provided 5.4 zlotys to the Polish budget. Taking into account all the costs involved in the granting of the rights to Ukrainians under the regulations to free education, healthcare and all social security programmes, most of the estimates, show that the costs incurred on the Polish budget for providing these rights is not higher than the contributions made by Ukrainians in all forms of taxation and ZUS[141].

[141] https://www.bgk.pl/files/public/Raporty/20250310_Wpływ_imigrantów_z_Ukrainy_na_polską_gospodarkę_FINAL.pdf

Concluding remarks

Concluding all the arguments, that have been described, the Polish economy, the labour market, as well as many individual markets, have significantly gained from initially migration and later the refugees from Ukraine. Due to demographical structure of the Polish population, composed year-by-year of fewer and fewer people of working age and an overall trend of aging population, as previously described, Poland needs a continuous inflow of migrants to satisfy labour market demand and keep up with its current GDP growth trends, one of the greatest in Polish history. Due to the current circumstances and war, it is quite obvious that one of the easiest and quickest ways of ensuring these, is by attracting more migrants from Ukraine, but also encouraging the refugees, who came after 2022, to stay in the country for a longer period of time. There are many ways in which Poland can attract Ukrainians to stay in the country for longer such as retaining the favourable economic conditions via social security programmes, guaranteed free education and healthcare, but also ensuring higher integration of Ukrainians into the Polish society through, for example, Polish language knowledge requirement.

Besides the direct positive impact of the inflow of refugees to Poland, which have led to an increase in the labour supply, higher consumption and investment, described earlier in this subchapter, the Deloitte report on the effect of war in Ukraine on the Polish economy, highlights the unaccounted effects of war on the Polish economy from refugees' inflow. These are the positive externalities, that have been studied and found to be present in many studies on countries experiencing the inflow of migrants and refugees from other countries. Namely, these externalities, manifest themselves on the labour market by higher aggregate output produced brought by the increased labour productivity. Thus, it is not only the matter of barely the increased supply of workers bringing higher output, but also their higher productivity, as a result of: skills, expertise, specialisation of workers from abroad, which could have not been known in the domestic economy before. Most researchers confirm that immigration, does not only cause an increase in the supply of labour, but causes an increase in labour productivity. These positive externalities, lead in the long run to the improvement in the quality and quantity of the country's factors of production. The inflow of many specialised workers and skilled and talented entrepreneurs, with high probability, will improve particularly the labour factor of production (via higher productivity and higher number of workers), capital, due to the higher and higher investment by Ukrainians in Poland and lastly the entrepreneurship factor of production, through their possibly innovative and unique skills and ideas. All these improvements can in the long run increase the capacity of the Polish economy (push the production possibilities frontier outwards) and have a positive impact on economic growth to be sustained over the longer run[142].

Supply side shocks

[142] https://data.unhcr.org/en/documents/download/106993

The outbreak of the war between Russia and Ukraine in February 2022 significantly disrupted global agricultural sector, triggering noticeable implications for Poland's agricultural sector and food supply chains. Both countries, Russia and Ukraine were among the world's leading agricultural sector producers in the world. In addition, before the start of the conflict, they were among top agricultural exporters globally. Thus, it was not a surprise, that the conflict had a particularly serious impact on the most food insecure places on earth, mainly the least developed countries in the world in Africa. As a result of the conflict, many trade roots of Ukraine for agricultural products exports (mainly all types of grains), have been blocked, due to military operations (mainly the Black Sea root) leading to a significant reduction of Ukrainian exports. Similarly, the wide-ranging sanctions imposed on Russia, have worsened the situation on agricultural market and food insecurity even more[143].

Eventually, Ukraine and Russia, with the United Nations as an intermediary in the negotiation process, managed to sign the Black Sea Grain Initiative in July 2022, and liberated grain exports globally. The Black Sea ports have been reopened and what's more important in Poland's context "solidarity corridors" have been established (one of which was Poland), to ensure quick and smooth export transits of grains to the poorest and the most food insecure countries, mainly in Africa and Asia. Additionally, the European Union, in Spring 2022, suspended the import restrictions and duties on Ukrainian goods as a part of its war aid to help Ukraine[144].

Impact of the war in Ukraine on the Polish agricultural sector and supply chains

At this point, it is important to point out, that Poland is also a significant player in the agricultural sector in Europe. Even though, the proportion of people employed in agriculture in Poland is lower (in 2022, around 9%), than it was back in the 1990s (around 22%)[145]. Since 1995, till today agriculture contributes to the Polish GDP more than the EU countries on average, making it still a relatively important sector for the Polish economy.

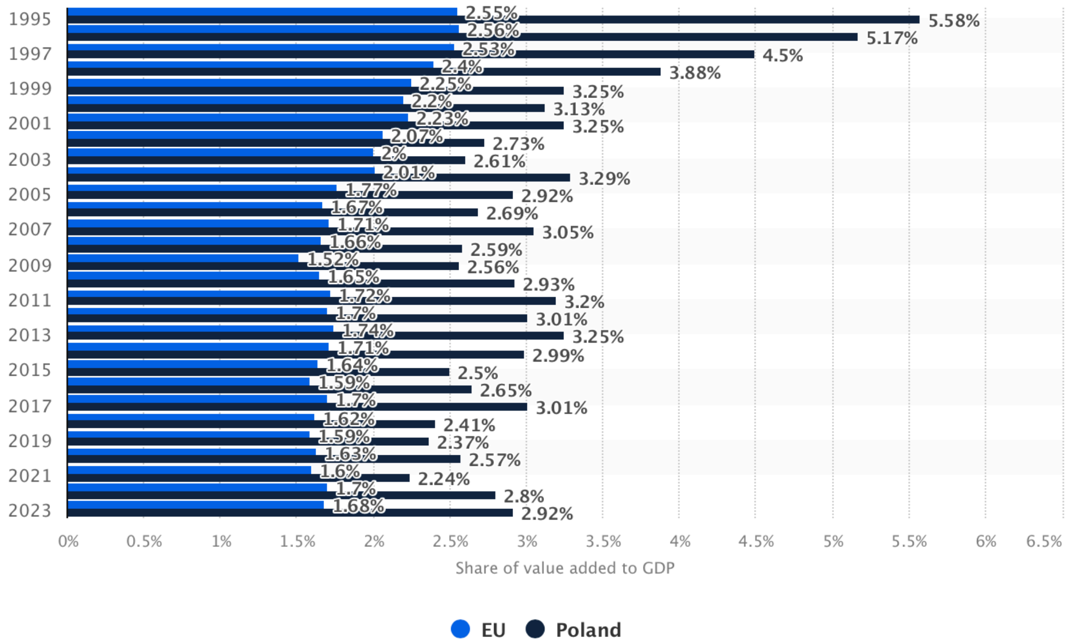
Diagram 5: Contribution of the agricultural cultivation and production to the Polish and EU's GDP between 1995 and 2023[146]

[143] https://www.economicsobservatory.com/ukraine-whats-the-global-economic-impact-of-russias-invasion

[144] https://www.dw.com/pl/bezcłowy-handel-ue-ukraina-do-czerwca-2025-roku/a-68134057

[145] https://www.bankier.pl/wiadomosc/Coraz-mniej-zatrudnionych-w-rolnictwie-a-alternatywy-czesto-brak-Dochodzi-do-pustynnienia-wsi-8540959.html

[146] World Bank. (August 12, 2024). Share of value added by the agricultural sector to the gross domestic product (GDP) in Poland and European Union (EU) from 1995 to 2023 [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/1406893/agricultural-sector-s-share-of-gdp-poland/



Even though, the share of agricultural sector in the Polish GDP, decreased since 1995, it is still, significantly above the EU average. The Polish agricultural sector produces an output, way above the needs of the domestic consumers. Thus, Poland exports a significant amount of its output. These agricultural goods, primarily involve meat, fish, vegetable fats and cereal grains[147], these are all very important, in the context of Ukraine-Russia war and the Polish competition with Ukraine, which similarly to Poland, is also a very large exporter of these commodities.

Moreover, what is important in the war context and its impact on the agricultural sector, Poland is one of the top grain producers in the European Union, supplying agricultural products in the vast majority to other EU countries, mainly Germany[148]. Similarly, Ukraine is one of the largest grain producers, but globally[149]. In addition, Ukraine, just as Poland, exports a significant amount of its grains to other EU countries[150]. Thus, it is apparent, that Ukraine is one of the biggest competitors of Poland in the agricultural sector and what is particularly worrying for the Polish agricultural sector, is the large increase in exports of

147 Krajowy Ośrodek Wsparcia Rolnictwa. (March 21, 2025). Commodity structure of Polish agri-food exports in Poland in 2024 [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/1257960/poland-commodity-structure-of-polish-agri-food-exports/

148 Krajowy Ośrodek Wsparcia Rolnictwa. (March 21, 2025). Geographical structure of exports of agri-food products from Poland in 2024, by country [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/1374543/poland-agri-food-exports-by-country/

149 https://www.statista.com/topics/12302/agriculture-in-ukraine/#topicOverview

150 National Bank of Ukraine. (March 29, 2024). Export value of agricultural products from Ukraine in 2023, by destination region (in million U.S. dollars) [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/876166/value-of-agricultural-products-exported-ukraine/

agricultural products from Ukraine to the European Union, after the start of war, mainly in 2022 and 2023[151].

Theoretically, under the Black Sea Initiative, Poland was supposed to be only an export and transition hub for the Ukraine grains to other countries, being itself a big producer of grains. However, very quickly the Polish authorities, have realised that the biggest challenge for Poland is to ensure that all the grain is exported and none of it remains on the domestic market. Noteworthy in this aspect, is the fact, that Ukraine on the contrary to Poland is not a member of the European Union, which implements specific cultivation and quality rules, regulations and requirements, that every member of the EU must fulfil to have access to the EU's agricultural and food market. For example, these regulations ban the use of specific pesticides and fertilizers. Ukraine, not being the member of the EU, is not subject to these regulations, as long as it does not export them to any of the countries subject to such regulations. The crops and other agricultural products, to be exported via the "Black Sea Agreement", were not cultivated in compliance with the EU rules, as these were intended to be sent to other third countries, outside the EU, and Poland was to be only a transit channel in the exports.

Over time, more and more Ukrainian grain intended for further exports was found to remain in the domestic market in Poland, rather than, as the agreement ruled exported in all to other countries. One of the controls of the "Najwyższa Izba Kontroli" (in English: Supreme Audit Office, responsible for: "examining the activities of government administration bodies, the National Bank of Poland, state legal persons and other state organizational units from the point of view of legality, efficiency, expediency and reliability"[152]), has revealed that in 2022, the import of one of the grains - wheat (of whom Ukraine is one of the largest global producers) to Poland have risen by more than 16 thousand percent relative to 2021 while corn imports by around 30 thousand percent[153]. Moreover, the grain stocks in Polish warehouses in 2023 increased by around 100%, relative to 2022[154]. Not surprisingly, these additional grain stocks have come in majority from Ukrainian grains, which were supposed to be exported, as they did not comply with EU requirements. However, this problem did not only include grains, but also other agricultural products for further exports. An outstanding agricultural good in this matter was also sugar. In 2022, Poland while being one of the largest European producers of sugar, imported in terms of the value, 3000% more sugar from Ukraine than in 2021[155].

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[151] National Bank of Ukraine. (March 29, 2024). Export value of agricultural products from Ukraine to the European Union (EU-27) from 2015 to 2023 (in million U.S. dollars) [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/876118/ukraine-agricultural-exports-to-the-eu/

[152] https://www.nik.gov.pl/podstawy-prawne-dzialania-nik/akty-prawne/konstytucja-rzeczypospolitej-polskiej.html

[153] https://www.nik.gov.pl/aktualnosci/import-zboza-z-ukrainy.html

[154] https://businessinsider.com.pl/gospodarka/nik-miazdzy-resort-rolnictwa-ws-importu-ukrainskiego-zboza/hjtk8cz

[155] https://businessinsider.com.pl/gospodarka/zboze-to-jeszcze-nic-zobacz-skale-importu-z-ukrainy/2z6p54v

Poland's trade dispute with Ukraine and the EU in the background

The fulfilment of the EU requirements has a significant effect on the production and cultivation costs in agriculture in EU countries. The situation in which one country when cultivating a product is subject to more regulations than the other, inevitably creates production costs differences and leads to unfair competition if domestic producers experience competition from foreign producers having more liberal cultivation regulations. This is what happened to Poland, seriously harming the quality of agricultural goods and the functioning of the Polish agricultural markets. Due to, the high prices of grains on the domestic Polish market in 2022 and the appeal of the Polish Minister of Agriculture to Polish farmers not to sell the grains and other agricultural goods as the prices will continue to be high, the domestic farmers have reduced their supply of the goods, believing the Minister's declaration, however simultaneously the import of grains from Ukraine increased dramatically.

The set of controls performed by the "Najwyższa Izba Kontroli" between 2022 and 2023, revealed, that 541 entities in Poland imported 4.3 million tons of grains and related goods of a total value of 6.2 billion zlotys. These firms imported the grains and other agricultural products from Ukraine, because of a significantly lower price, from that at which they could buy these domestically on the Polish and the EU market, subject to strict regulations. Due to these dishonest actions of entities and the higher stock of grains in warehouses, fuelled from Ukraine, has led to a fall in the price of grains on the Polish market. This has been extremely destructive for the domestic farmers, who were not able to sell their grains produced (the grains can be stored only for up to 3 years). "According to data from the Ministry of Finance, in the period from January 1, 2022, to April 30, 2023, the average price per ton of wheat imported from Ukraine was PLN 1,090.74 and corn - PLN 1,096.16. The average prices of imported grain from Ukraine in 2022-2023 were lower than the average prices of these products on the domestic agricultural market"[156].

This situation and the continuously worsening conditions of the Polish farmers, due to unfair competition have eventually led to protests and demonstrations, particularly in the regions bordering with Ukraine. The tensions were getting stronger and stronger, with the farmers gathering together from the entire country protesting against imports from Ukraine. The demonstrations lasted for months and eventually became so severe, that the Polish farmers started blocking borders with Ukraine on their own and spilling grains from Ukrainian trucks at the border crossings[157]. This has finally forced the Polish Minister of Agriculture in December 2022 to file a request to the European Commission to take an action to prevent further destabilisation of the Polish grains and other agricultural markets.

Because of the European Commission not taking any action and rejecting the Polish request on restoration of customs duties on agricultural goods from Ukraine, in April 2023, the Polish Minister of Development and Technology imposed an embargo on a set of agricultural goods

[156] https://www.nik.gov.pl/aktualnosci/import-zboza-z-ukrainy.html

[157] https://businessinsider.com.pl/gospodarka/polscy-rolnicy-wysypali-ukrainskie-zboze-jest-reakcja-ukrainy/s6yrvs6

from Ukraine involving for example: grains, sugar, honey and oilseeds. Poland was not the only country that imposed the embargo on agricultural goods from Ukraine, due to a lack of reaction of the EU, identical actions have been taken by Slovakia and Hungary. Importantly, this embargo, did not include the transit of Ukrainian agricultural products to other countries. Just two weeks after the embargos from 3 countries have been imposed, the European Commission in May 2023 a temporary embargo on Ukrainian wheat, corn, rapeseed and sunflower seeds to all EU countries, bordering with Ukraine, including Poland. This embargo however ended in mid-September and the European Commission, decided not to prolong it. Following this decision, the day following the end of the EU embargo, the Polish Minister of Development and Technology again imposed the same embargo as in April 2023. In response to this decision, Ukraine filed a complaint on Poland to the World Trade Organisation (WTO)[158]. The NIK (Najwyższa Izba Kontroli), reviewed, that these decisions, were made way too late, allowing the disruption to the domestic market to develop and become more severe for Polish farmers, many of whom the standards of living have dropped significantly[159].

A series of food inspection controls, over the time of the grain crisis, revealed that a high portion of grain that entered Poland and was declared in documentation to be used for industrial purposes, was utilized improperly, in many cases in the food production in Poland, mainly bread[160]. This grains, were of a significantly lower quality from that intended for food production, worsening the quality of food available in the Polish market. Moreover, all the controls performed between 2022 and 2023, at the peak of the crisis, exposed that around 30% of Ukrainian grain imported, contained harmful substances, exposing consumers to serious health issues[161].

Nevertheless, it is noteworthy to point out, the improvement of the Polish net trade balance in agri-food commodities, following the outbreak of the war between Russia and Ukraine.

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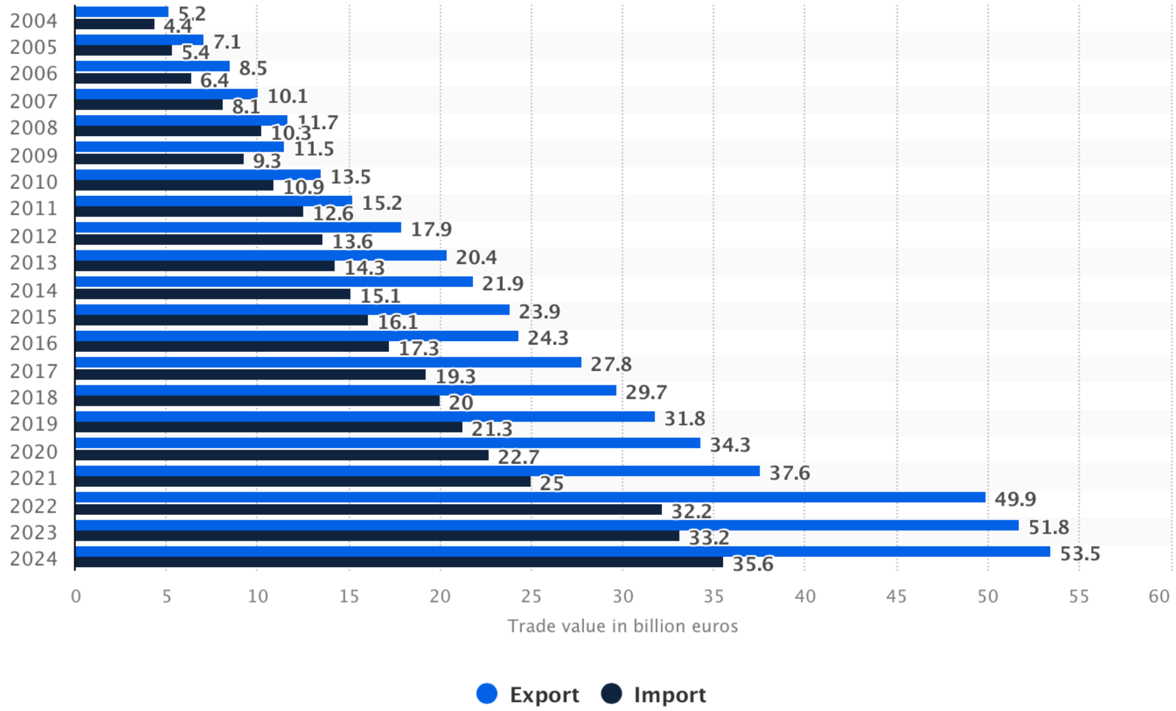
158 https://www.statista.com/topics/11324/agriculture-in-poland/

159 https://www.euronews.com/business/2024/03/23/with-unsold-grain-piled-high-a-polish-farmer-faces-an-uncertain-future-as-war-in-ukraine-g

160 https://www.bankier.pl/wiadomosc/300-tys-bochenkow-chleba-z-technicznego-zboza-z-Ukrainy-Sa-pierwsze-zarzuty-8595222.html

161 https://www.nik.gov.pl/aktualnosci/import-zboza-z-ukrainy.html

Diagram 6: Value of exports and imports in agricultural and food commodities of Poland between 2004 and 2024 (in billion euros)[162]



Poland since 2004, every year experienced a positive net trade balance in agri-food products. However, starting from 2022, there has been a large increase in the exports of these commodities and a relatively smaller increase in imports, increasing significantly the net trade balance in agri-food products of Poland.

In addition to the problems posed on the Polish agricultural sector, by the Ukrainian agricultural exports, there were additional fields that negatively affected the producers, but via a different channel, namely the increase in input prices.

The issue of fertilisers

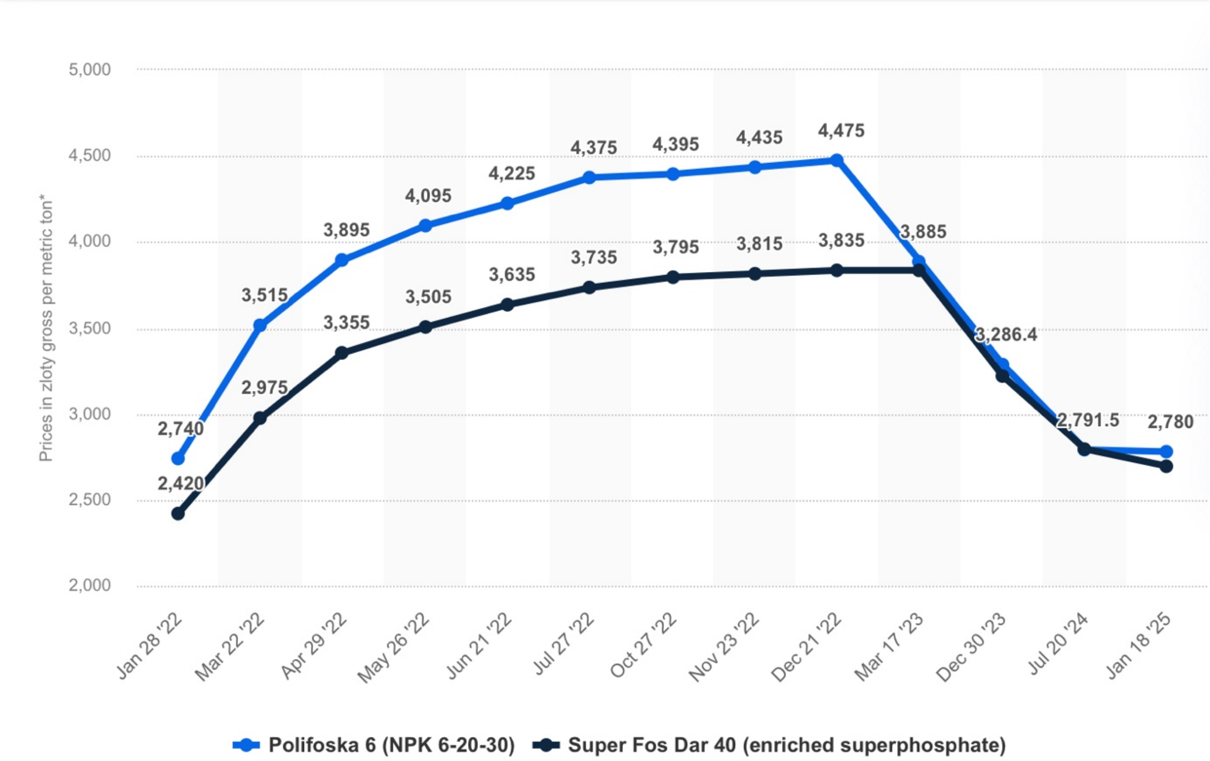
In the agricultural sector, a crucial role is played by fertilizers, which serve to enhance the growth of the plants, the crop yields, contributing to the increased productivity in agriculture. While the production of fertilizers in Poland is higher and higher every year, yet still insufficient to fulfil the needs of the domestic agricultural sector. Russia and Belarus are one of the largest fertilisers producers and exporters, but also of the components needed to produce these, such as nitrogen and phosphorus[163]. Poland imported the vast majority of fertilisers and fertiliser components from Belarus and Russia before the war in 2022. Following the outbreak of the conflict the European Union decided to impose a series of

[162] Krajowy Ośrodek Wsparcia Rolnictwa. (March 21, 2025). Export and import value of agricultural and food products in Poland from 2004 to 2024 (in billion euros) [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/1261424/poland-agri-food-exports-and-imports-value/

[163] https://www.ft.com/content/c69c8243-3b04-45d4-8408-dfaaff82e8f2

economic sanctions on Russia, also applying to key fertiliser ingredients[164]. This, has led to the disruptions in the exports of these fertilizers to Poland, contributing to an increase in their price and increasing the cost of production to the Polish agricultural producers.

Diagram 7: "Wholesale prices of selected compound fertilizers in Poland from January 2022 to January 2025, by type of product (in zloty/metric ton)"[165]



The price of both compound fertilisers, increased steadily, starting from 28th January 2022, a month before the start of the war. The prices rose sharply in the first month of the war and eventually increased more slowly. Starting from 17th March 2023, the prices of both fertilisers, started decreasing.

Due to other factors, hampering the production of fertilisers in Poland, such as increases in the price of their main production input: gas, fall in the domestic production of fertilizers and the fact, that not all the fertilizers were covered by sanctions, the farmers in Poland, still found it more profitable to import fertilizers from Russia, despite wide-ranging sanctions. Indeed, the value of imports of fertilizers to Poland from Russia, increased by more than 100% between 2023 and 2024[166].

[164] https://www.ft.com/content/c69c8243-3b04-45d4-8408-dfaaff82e8f2

[165] terazpole.pl, & Wiadomości Rolnicze Polska. (January 18, 2025). Wholesale prices of selected compound fertilizers in Poland from January 2022 to January 2025, by type of product (in zloty gross per metric ton) [Graph]. In Statista. Retrieved April 02, 2025, from https://www.statista.com/statistics/1377170/poland-wholesale-prices-of-compound-fertilizers/

[166] https://www.reuters.com/markets/commodities/kremlins-fertilizer-cash-stream-is-blind-spot-eu-sanctions-vladimirov-2025-03-14/

This situation poses a significant challenge for domestic companies producing fertilisers. Poland has a continuously growing fertilisers market; however, its development is decelerated by the very low price of Russian fertilisers available in the market. The EU is considering imposing additional sanctions, to cover more of the components for and fertilisers themselves, to prevent a too high dependency on Russian exports. The development of fertilisers industry in Poland is very important, because such a high reliance on Russian fertilisers and the lack of alternatives produced domestically, can pose a serious threat in the agri-food production, in the case of a cut-off from Russian deliveries. It can lead to a similar dependency on Russia of Poland, but also other European countries as in the case of other commodities, such gas and oil, having serious implications on the functioning of the economies. This energy market consequences will be discussed in the next subchapter.

Energy prices

The war between Russia and Ukraine, has brought with itself an additional, very likely the most serious consequence globally, particularly on European countries. The conflict in Ukraine, has negatively influenced the global energy markets. The prices of energy are extremely important for both economic and social reasons in the countries. The fluctuations in the price of them, affects all the economic agents in the economy. For all types of producers, energy is a necessary input to conduct their operations. It is used to power the factories, transport, but also importantly over the recent years, in the digital infrastructure, mainly artificial intelligence, which use requires a lot of energy.

For consumers energy is also a necessity, without which they would be unable to power and heat their houses or fuel their cars. In addition, rises in the prices of energy are a major stimulant for inflation, chich reduces the purchasing power of consumers, raises the costs of living and lowers the standards of living of households, especially those with lower income levels. Moreover, on the aggregate scale, the changes in energy prices, or the cut-offs in the supply of energy resources may have serious implications on the national security and stability. High dependency on imports of energy resources, relevant in the context of Poland and explained later makes the economy highly vulnerable to geopolitical risks such as war, which disrupt the usual supplies. All these reasons taken together, justify, why the price stability of energy resources is crucial for the well-functioning of the economy.

The adverse effect of war on energy markets, can be explained, by the fact that one of the sides of the conflict, Russia is among the largest players on the global energy markets. Russia, back in 2023 was the second largest producer of natural gas in the world, the third largest oil producer and the fourth largest electricity generator globally. In addition, Russia is one of the largest exporters of coal[167]. Worldwide, Russia delivers, nearly 23% of all energy to other countries[168].

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[167] https://www.statista.com/topics/9680/energy-sector-in-russia/#editorsPicks

[168] https://www.ecb.europa.eu/press/economic-bulletin/focus/2022/html/ecb.ebbox202204_01~68ef3c3dc6.en.html

All the countries have been affected by the energy supply disruption, but the war has affected the most, the European countries, because of their heavy reliance on Russian exports of energy before the war. The conflict has led to a sharp rise in the prices of energy and resulted in a high price volatility, leading to a significant uncertainty in many countries. Because of this heavy dependency of the EU countries on the Russian energy supplies, the effect of war on the energy market, did not only hit the EU indirectly through changes in the world energy market, but also directly from the purchases of energy supplies from Russia. In 2021, just one year, before the outbreak of war with Ukraine, Russia was the largest energy supplier to the euro area[169]. In addition to the supply disruptions of gas, oil and coal due to war, the problems have been deepened as the EU imposed economic sanctions, targeting the energy market of Russia, mainly the coal and oil markets[170].

Before the outbreak of war, Russia delivered around 40% of natural gas and 25% of all crude oil used in the European Union countries. Not surprisingly, Poland as one of the EU countries was also very heavily dependent on the energy supplies from Russia. In the years prior to war, Poland was one of the largest importers of fossil fuels from Russia in the European Union. Over the years prior to the war, Poland was already in the process of the diversification of its suppliers of energy, to decrease their dependency on Russia. Indeed, the total value of Poland's imports of energy from Russia, was decreasing already before the start of war. Noteworthy, before the war, Poland was the second largest extractor of coal in the European Union[171]. Nevertheless, Poland was unable to fulfil its energy consumption using the domestic resources. According to the data from 2020, 46% of the Poland's energy demand was fulfilled via the imports of energy resources from other countries. Domestically, Poland produced 80% of coal, 20% of the natural gas and 3% of oil of its annual consumption. Among the imports of this energy resources, 55% of natural gas, 66% of crude oil and 75% of hard coal imports was delivered to Poland from Russia[172].

Despite the Polish very high pre-war dependency on natural gas imports from Russia, Poland stopped importing in April 2022, because of the suspension of natural gas delivery, from one of the largest natural gas suppliers in Russia- Gazprom. This decision was motivated by the fact that Poland refused to pay Gazprom in rubels for the natural gas. Even though the contract on the gas deliveries with Poland was valid till the end of 2022, Gazprom cut-off their natural gas supplies in April 2022. This resulted in a wide-ranging strong uncertainty in the country regarding the future suppliers and the availability of energy back then[173].

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[169] https://www.ecb.europa.eu/press/economic-bulletin/focus/2022/html/ecb.ebbox202204_01~68ef3c3dc6.en.html

[170] https://www.ecb.europa.eu/press/economic-bulletin/focus/2022/html/ecb.ebbox202204_01~68ef3c3dc6.en.html

[171] https://obserwatorgospodarczy.pl/2022/05/03/ue-polska-dominuje-w-produkcji-wegla-kamiennego-niemcy-w-produkcji-brunatnego/

[172] https://www.forum-energii.eu/en/the-end-of-energy-resource-imports-from-russia

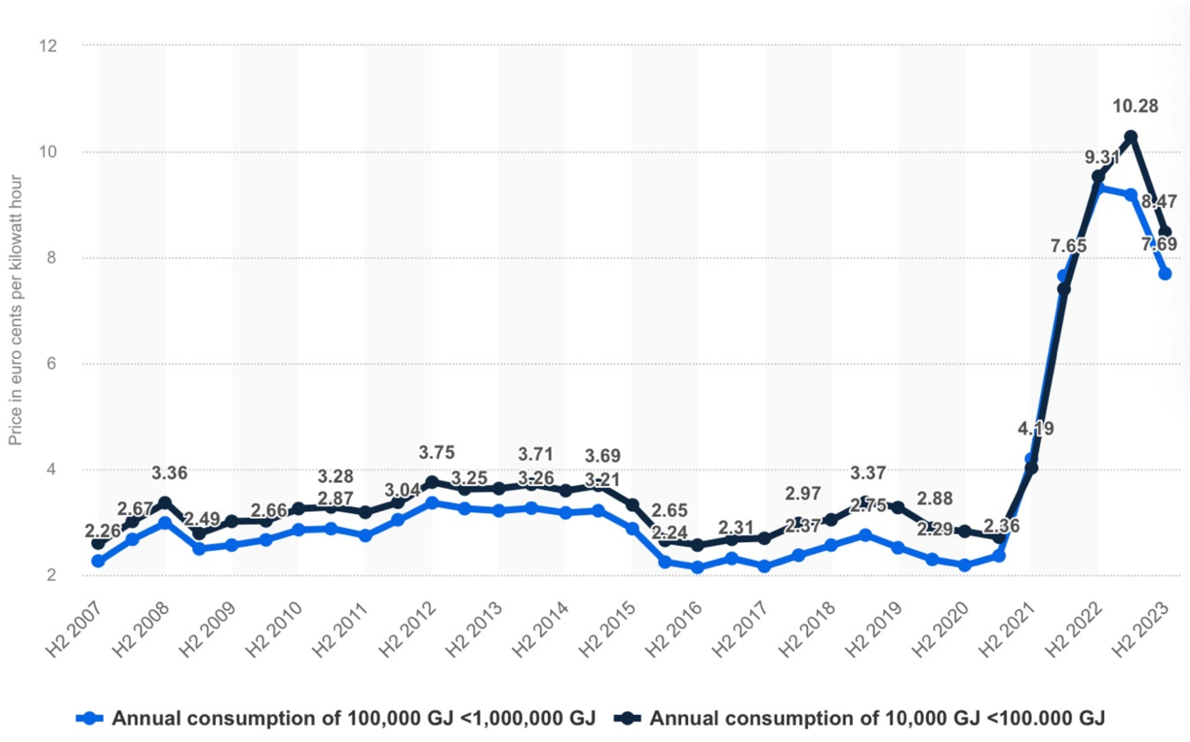
[173] https://www.forum-energii.eu/en/the-end-of-energy-resource-imports-from-russia

The issue of energy diversification and gas prices

Natural gas is a crucial energy resource for Poland for a wide variety of strategic reasons. Firstly, it is a key raw material for the chemicals and fertilizers production, which is growing and increasingly important for Poland, in the area of its food security. Secondly, natural gas it is widely used in Poland by consumer households to heat their houses and for cooking purposes, playing a very important role in the energy consumption of households, in particularly during winter seasons. Moreover, natural gas is used, as one of the components used to generate electricity via a gas turbine. In addition, natural gas helps Poland to diversify its energy resources, such as the historical reliance on the use of coal for generating energy. Lastly, natural gas is widely used through the EU programmes as a transitional fuel, towards cleaner energy generation sources and what's the most important in this context, the natural gas emits significantly less greenhouse emissions and pollution than coal, simultaneously helping Poland to comply with EU climate regulations and targets[174].

Thus, under such circumstances, Poland had to intensify its action in finding alternative gas suppliers to fulfil its domestic demand. Not surprisingly, this cut, together with the impact of war itself resulted in a very steep increase in the price of natural gas in Poland.

Diagram 8: "Prices of natural gas for the industry in Poland from 2008 to 2023 (in euro cents per kilowatt hour)"[175]



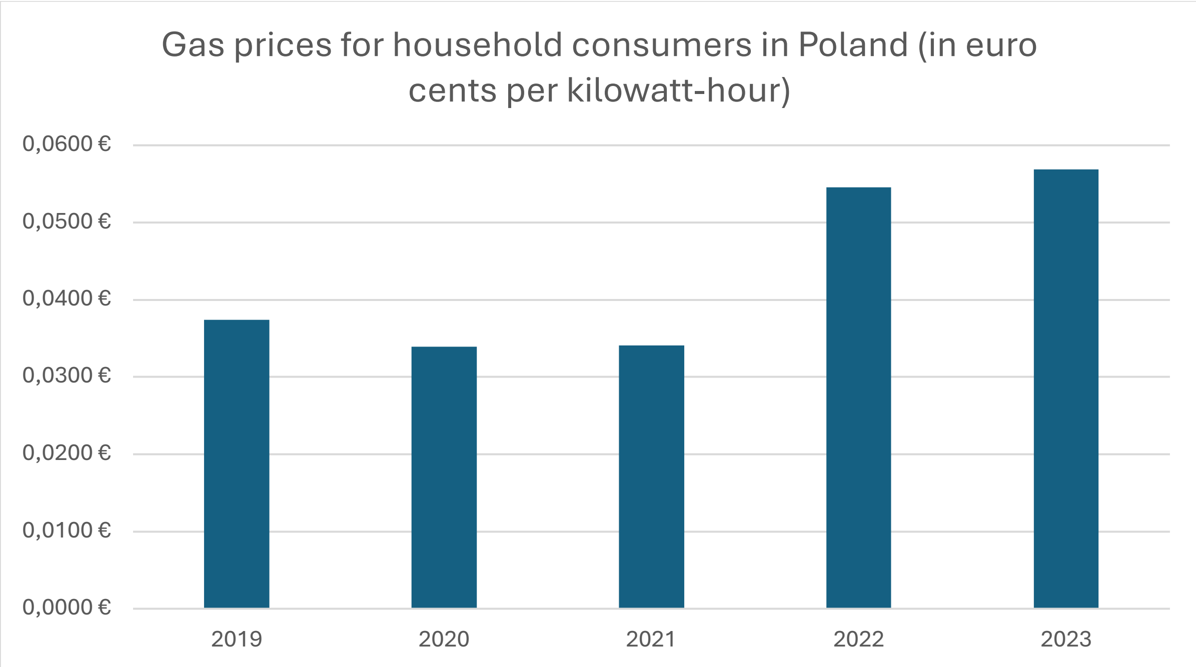
[174] https://www.mdpi.com/1996-1073/17/23/5935

[175] Eurostat. (April 19, 2024). Prices of natural gas for the industry in Poland from 2008 to 2023 (in euro cents per kilowatt hour) [Graph]. In Statista. Retrieved April 03, 2025, from https://www.statista.com/statistics/595758/natural-gas-average-price-poland/

The price of natural gas in Poland, paid by producers, across industries rose very sharply in 2022. Between 2021 and 2022, the price of natural gas rose by more than 300%. This has significantly increased the costs of production for the firms operating in Poland, leading to a lower profitability, and investment.

However, the rise in the price of natural gas, did not only affect negatively the producers and firms through higher costs of production, but also another key economic agent, the household consumers.

Diagram 9: Gas prices for household consumers in Poland between 2019 and 2023[176]



The prices of natural gas paid by consumers, similarly as those paid by the producers and businesses, increased quickly in 2022 and stabilised at a higher level in 2023. The highest increase took place between the year before the war, 2021 and the year when the war started in Ukraine, in 2022, by over 60%. As the gas is very widely used in Poland for heating in the houses, this price increase has particularly negatively affected the disposable income of Polish families in winter 2022 and 2023 compared to the years before the outbreak of war.

As a result of this price rises of natural gas, and the cut of deliveries, from its largest supplier, Russia, Poland had to either look for alternative suppliers of natural gas or look for alternative energy resources to ensure that the needs of the Polish economy for energy are fulfilled. Poland decided to implement a strategy to secure alternative energy sources. This was done via replacing the previous natural gas imports with increased Liquefied Natural Gas (LNG) imports using its ports in the north of Poland, by the Baltic Sea, focusing on increasing the capacity of the ports to receive more shipments from diverse suppliers. This allowed

[176] https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_202/default/table?lang=en

Poland to significantly break the dependence on Russia in energy resources, by securing the imports of liquified gas from diverse countries, mainly the United States and Arab countries such as Qatar[177].

In addition, Poland opened in September 2022, the Baltic Pipe, a gas pipeline connecting Poland to Norway, through Denmark, allowing Poland to facilitate the increase of its gas imports from Norway, further allowing Poland to diversify its energy suppliers, and thus reducing the exposure to energy crisis's of Poland in the future[178].

Oil supply diversification and the price issue

Another key energy resource, necessary for the functioning of the Polish economy in ensuring, the domestic energy needs are met is crude oil. It is the world's most important source of energy, and is often called the "black gold", due to its wide-ranging use as a raw material, as which it is used in the refining process, in which the crude oil is refined into a wide variety of fuels such as diesel, gasoline, heating oil and kerosene. Moreover, it is an important component used by different industries in the production of chemicals, medicines and plastic[179]. Furthermore, crude oil is necessary and a primary source of energy. It is used as a fuel for all types of vehicles such as cars, buses, tanks and it is an important energy source in the production of heat and the generation of electricity[180].

Similarly, as in the case of natural gas, the prices of crude oil on global markets and in Poland, have spiked, after the start of war. The increase in the price of crude oil, can be reflected through the price rise of all fuels, to the production (refining process) of which, crude oil is necessary.

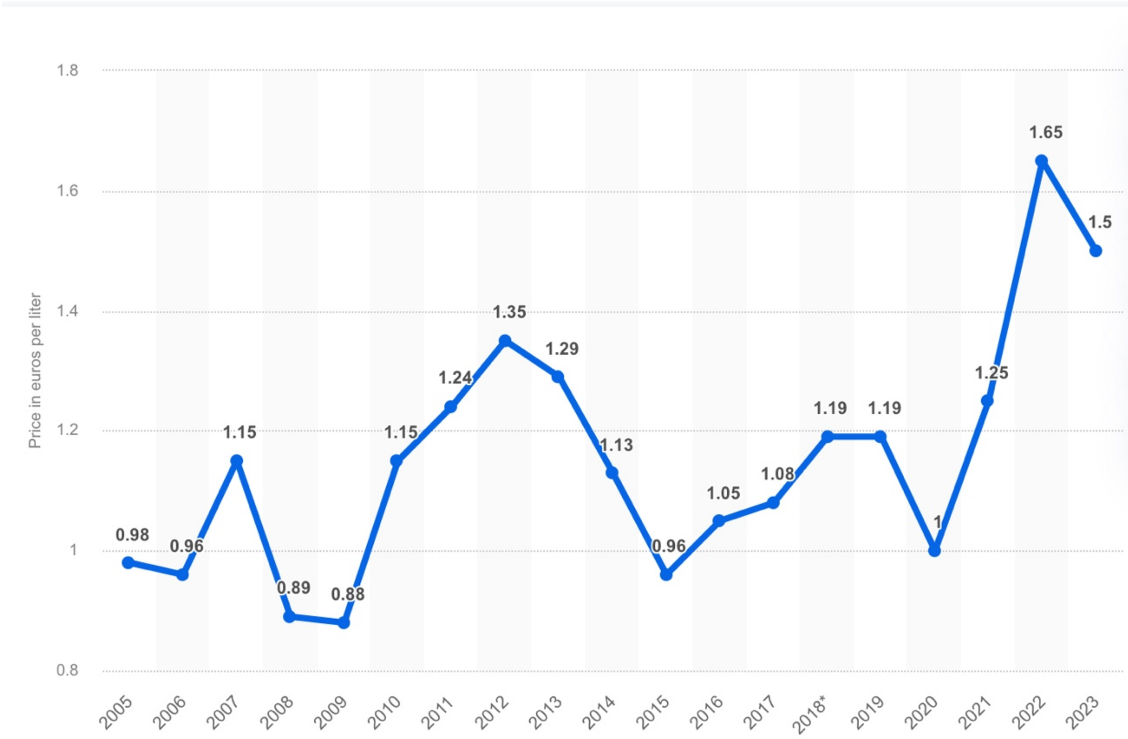
177 https://www.offshore-energy.biz/300th-lng-cargo-comes-to-polands-terminal-as-further-expansion-continues-in-the-background/

178 https://commission.europa.eu/news/launch-baltic-pipe-2022-09-27_en

179 https://www.learnsignal.com/blog/crude-oil/

180 https://www.learnsignal.com/blog/crude-oil/

Diagram 10: "Average prices of diesel fuel in Poland from 2005 to 2023 (in euros per litre)"[181]



One of the most important fuels, which is produced through a refining process from crude oil is diesel. It is the most widely used and sold fuel in Poland to power all types of vehicles, starting from cars and ending with trucks[182]. Thus, the fluctuation in the price of this oil, in a significant way influences the costs of production of firms involved in transportation, but also other industries using machines in their production, powered by diesel. In addition, as the vast majority of the population in Poland, owns and drives a vehicle (mainly cars), the change in the price of diesel, also influences the disposable income of households[183]. The conflict in Ukraine in 2022, led to a strong rise in the price of diesel in 2022, and fell in 2023, but at a still higher level than before the war. The highest increase took place between the last year before the war, 2021 and the year in which the war started in 2022, between these two year the price of diesel increased by more than 30%.

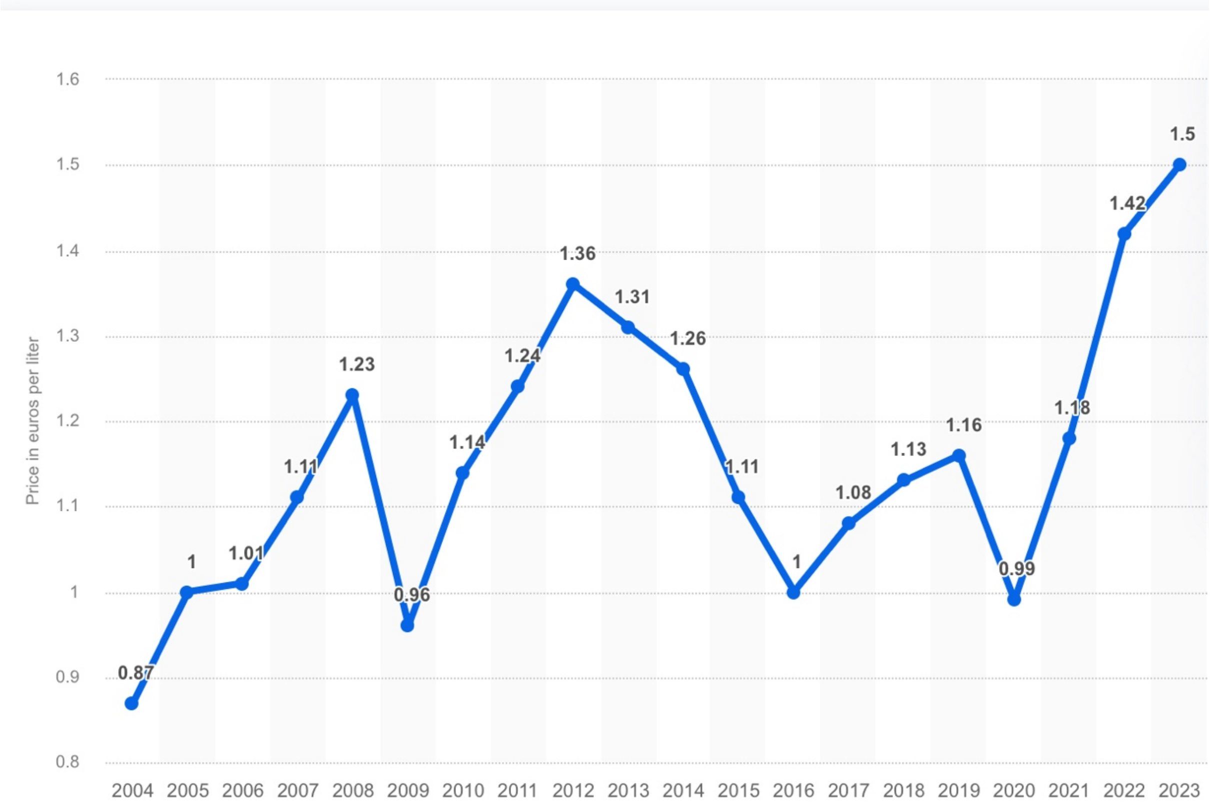
[181] European Commission. (May 2, 2024). Average prices of diesel fuel in Poland from 2005 to 2023 (in euros per liter) [Graph]. In Statista. Retrieved April 04, 2025, from https://www.statista.com/statistics/603754/diesel-fuel-prices-poland/

[182] https://menadzerfloty.pl/aktualnosci/najpopularniejszym-paliwem-w-polsce-jest-olej-napedowy/

[183] https://www.transport-publiczny.pl/wiadomosci/prawie-kazdy-polak-ma-auto-staroc-ale-i-tak-sie-nim-chwali-badanie-60893.html

Similarly to diesel, the price of the second most popular fuel used in Poland, namely petrol produced from crude oil, has also increased on the Polish market.

Diagram 11: "Average prices of unleaded gasoline (95 RON) in Poland from 2004 to 2023 (in euros per liter)"[184]



Gasoline is the most used petroleum product in Poland. It is refined from petroleum, and it is the second most popular fuel in the Polish economy. It is widely used to fuel the vehicles, such as buses, cars, trains and airplanes. The prices of gasoline have rapidly and severely grown after the outbreak of war. Between 2021 and 2023 the price of gasoline, increased by around 27%. In addition, other products refined from petroleum, such as the heating oil is broadly used for heating in houses and apartments. Moreover, other petroleum products are frequently used to power machineries and equipment used in the manufacturing sector of the economy[185]. Thus, the increase in the prices of petroleum products, have not only affected individual economic agents and industries, but the entire economy, increasing the costs of production incurred by firms and reducing the disposable income of consumers, using petroleum for heating or driving gasoline fuelled cars.

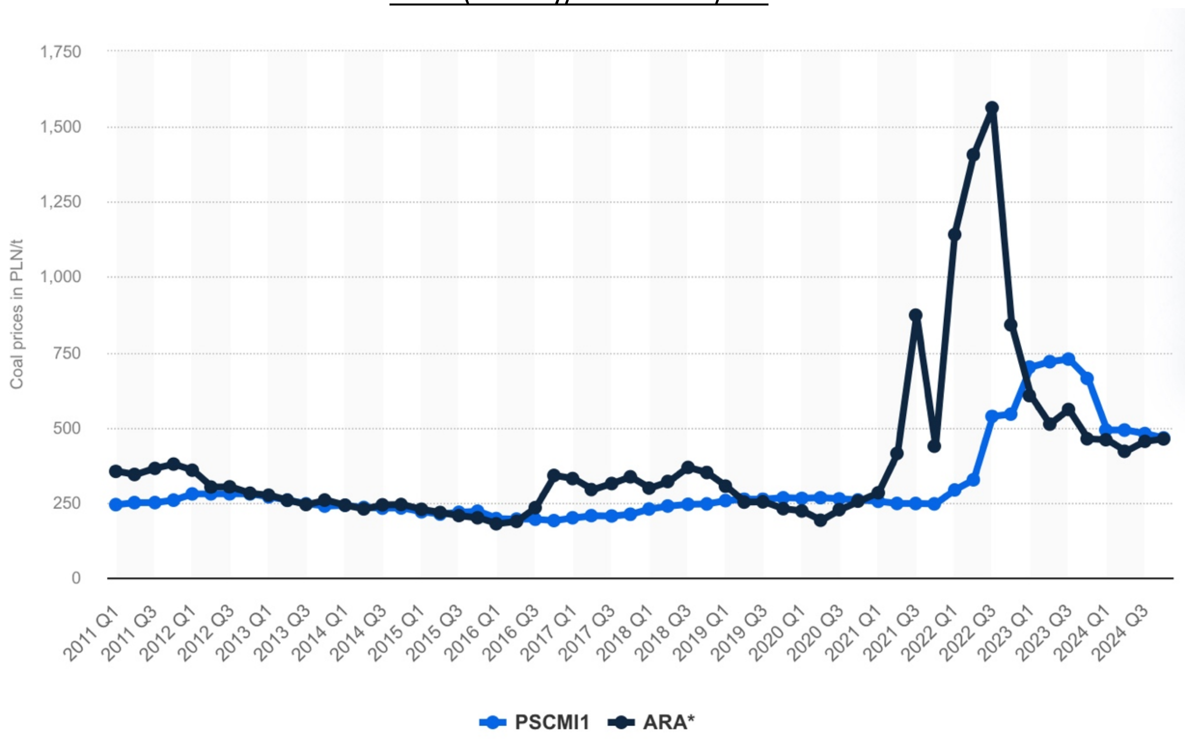
[184] Polish Organization of Oil Industry and Trade, & BMWK. (January 4, 2024). Average prices of unleaded gasoline (95 RON) in Poland from 2004 to 2023 (in euros per liter) [Graph]. In Statista. Retrieved April 04, 2025, from https://www.statista.com/statistics/598097/unleaded-gasoline-prices-poland/

[185] https://www.eia.gov/energyexplained/oil-and-petroleum-products/use-of-oil.php

The issue of coal imports from Russia and its price in Poland after the outbreak of war

The third most important energy source of Poland is coal. As previously mentioned, Poland itself, before the war in 2020, was the second largest producer and exporter of coal in the European Union, after Germany. However, despite extracting large quantities of coal from its mines, mainly in the Silesia region of the country, Poland still could not fully fulfil its coal needs from domestic extraction. Thus, Poland needed to import the coal needed from abroad, in 2020, as mentioned previously 75% of the coal imports, were delivered from Russia. In the years before the war, coal was Poland's most important most important resource, used to produce energy. Back in 2020, Poland, using only coal, generated 68.5% of the nation's electricity produced. In addition, coal serves to fulfil the heating needs of households and manufacturers, in 2022, more than 32% of anthracite coal, was used to produce heat. Coal, was historically, an energy source, that allowed Poland, to fulfil, the vast majority of energy needs, without being highly dependent on other parties. Over the years however, due to many factors including higher extraction costs and environmental issues, Poland reduced its extraction of coal and close many coal mines. For these reasons, Poland needed to increase its coal imports from other countries, the most significant among these was Russia. It was not a surprise, that such a high pre-war coal imports dependency on Russia will bring adverse effects on the price of this energy source, as the war outbreaks[186].

Diagram 12: "Coal prices in Poland (PSCMI1 index) and worldwide (ARA index) from 2011 to 2024 (in zloty/metric ton)"[187]



[186] https://www.forum-energii.eu/en/the-end-of-energy-resource-imports-from-russia

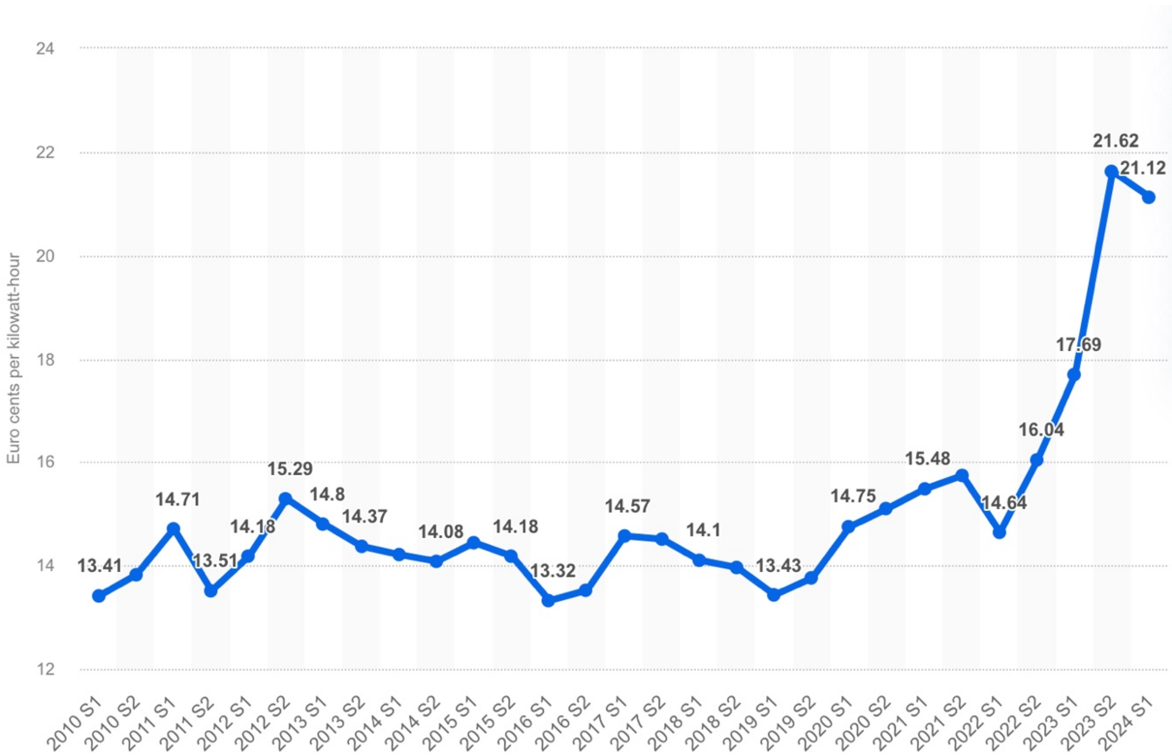
[187] Polski Rynek Węgla, & wnp.pl. (March 11, 2025). Coal prices in Poland (PSCMI1 index) and worldwide (ARA index) from 2011 to 2024 (in zloty per metric ton) [Graph]. In Statista. Retrieved April 04, 2025, from https://www.statista.com/statistics/1124875/poland-coal-prices/

The prices of coal in Poland quickly skyrocketed after the outbreak of war, between the last quarter of 2022 and the fourth quarter of 2022, the global coal prices measured by the ARA index (based on the prices of future contracts at which coal is available in the largest European ports), increased by shocking 257%. Moreover, the domestic price of coal, measured by the "Polish Power Coal Market Index" (PSCMI1), which is sold to the industries and energy producers in Poland, also notably increased, but significantly less from the global coal price. Between the last quarter of 2021 and the last quarter of 2022, the domestic price of coal for energy producers increased by over 24%[188].

Electricity costs after the outbreak of war

Taking all the increases in prices of the three most important energy sources of Poland, natural, crude oil and coal, it is worthwhile to show, how these fluctuations together, have shaped the aggregate cost of energy in Poland, by looking at the changes in the price of electricity.

Diagram 13: "Electricity prices for households in Poland from 2010 to 2024, semi-annually (in euro cents per kilowatt-hour)"[189]



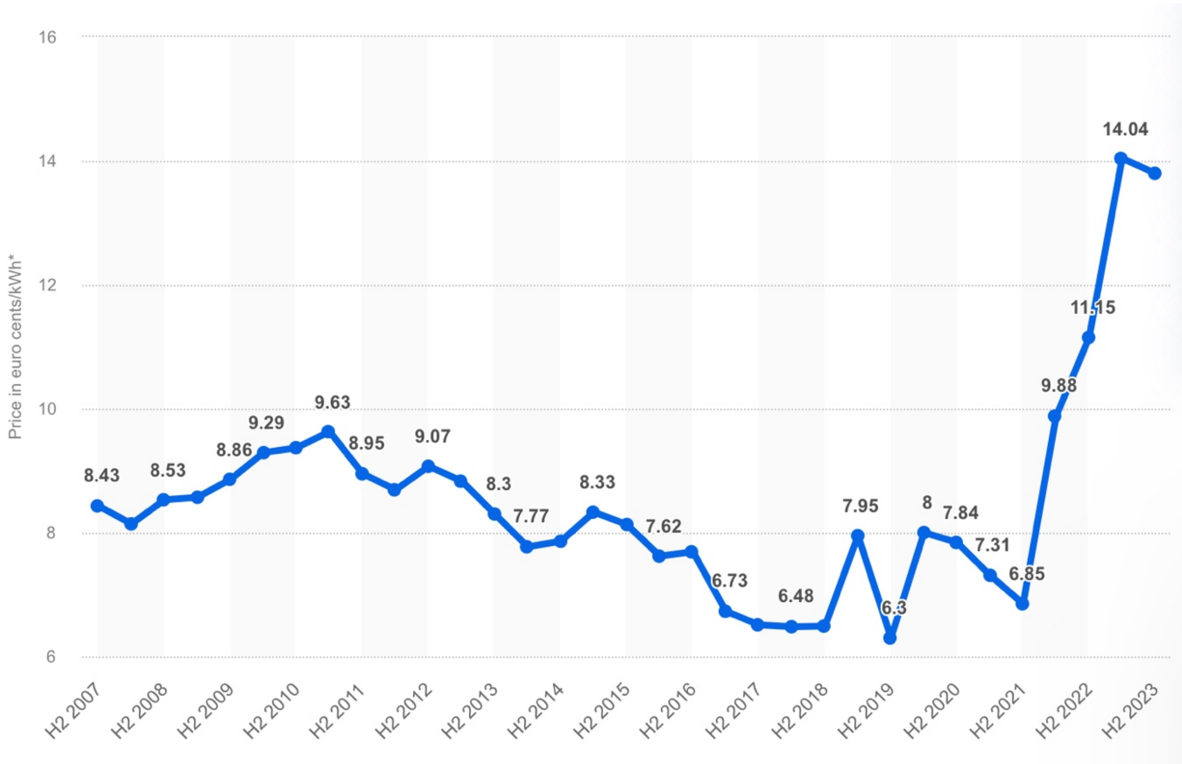
[188] https://www.statista.com/statistics/1124875/poland-coal-prices/

[189] Eurostat. (October 27, 2024). Electricity prices for households in Poland from 2010 to 2024, semi-annually (in euro cents per kilowatt-hour) [Graph]. In Statista. Retrieved April 04, 2025, from https://www.statista.com/statistics/418110/electricity-prices-for-households-in-poland/

Electricity is a necessity of consumer households, it is widely used to power, the vast majority of housing devices, such as refrigerators, washing machines, lighting systems and others. Increase in price of electricity for households in Poland, did not grow as rapidly as the energy sources, at the first 6 months after the start of war, eventually in the subsequent months, the rise was much more rapid. Between the first half of 2022 and second half of 2023, the price of electricity increased by nearly 50%. This rise in prices, due to a wide-spread use of electricity by households had very negative implications on the standards of living of the families in Poland, particularly of the families earning lower incomes.

In addition to the increase in price for electricity for households, a similar trend was seen, for the prices paid by the producers and manufacturers.

Diagram 14: "Prices of electricity for industry in Poland from 2007 to 2023 (in euro cents per kilowatt hour)"[190]



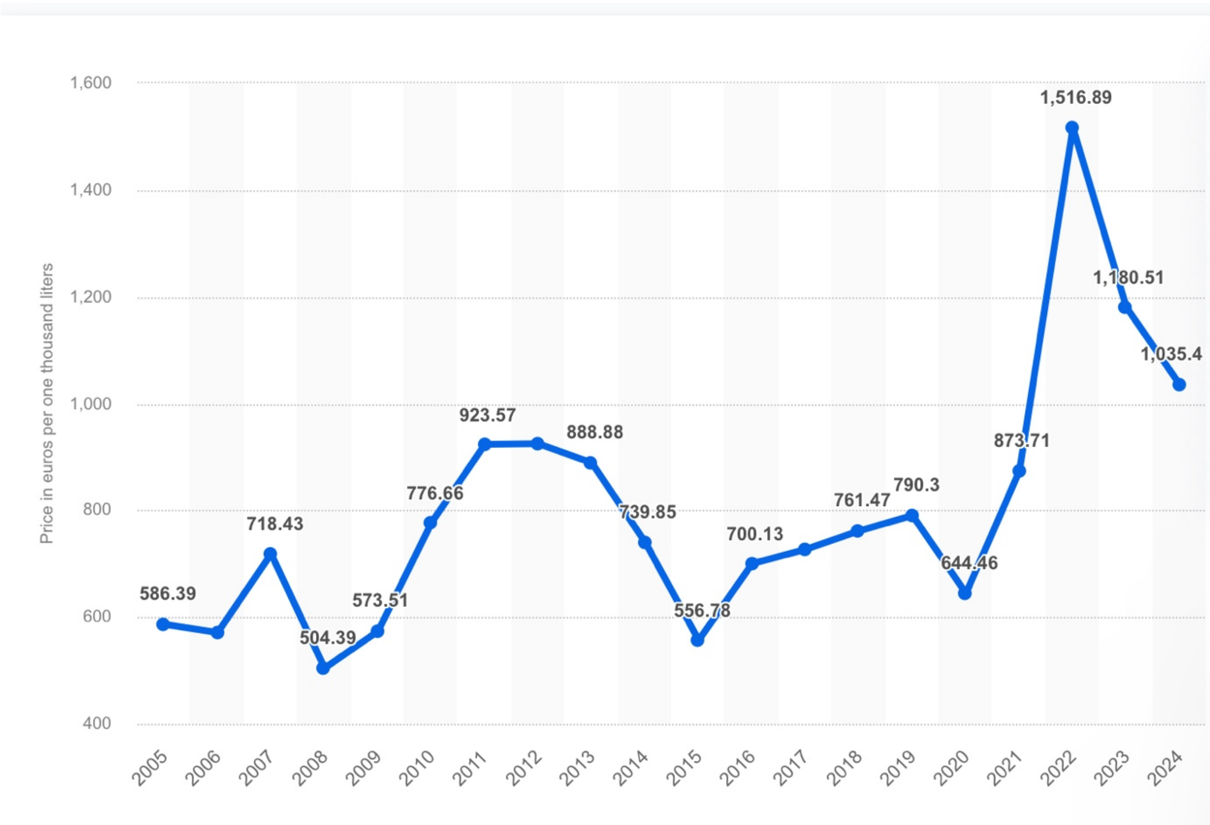
The prices of electricity paid across the industries in Poland, similarly as for the consumers also increased. The price of electricity for manufacturers increased by more than 100% between the second half of 2021 and the first half of 2023. As the electricity is used by all of the firms in the industries, this increase, led to an increase in the costs of production of firms

[190] Eurostat. (April 18, 2024). Prices of electricity for industry in Poland from 2007 to 2023 (in euro cents per kilowatt hour) [Graph]. In Statista. Retrieved April 04, 2025, from https://www.statista.com/statistics/596274/electricity-industry-price-poland/

and thus lower profitability and lower investments, slowing down the economic growth in Poland.

Similarly, the increase in the prices of different energy sources, have influenced the price of heating. This price fluctuation particularly impacted the household consumers, as most of the heating is consumed in houses and apartments, nevertheless it also impacted producers, who paid for heating their factories, offices and other business estates.

Diagram 15: "Average prices of heating gas oil in Poland from 2005 to 2024 (in euros per 1,000 liters)"[191]



The price that producers and consumers need to pay for heating purposes, has also risen significantly, following the outbreak of war, both reducing the disposable income of consumers and lowering their standards of living and increased the costs of production to producers, reducing their profitability. Comparing the heating prices in Poland before the war in 2021 and after the start of the conflict in 2022, show a year-to-year increase of 73% in the price of heating oil.

Undoubtfully, the outbreak of the war between Russia and Ukraine in February 2022, had a significant impact on the prices of energy sources and consequently of energy itself. Moreover, as indicated the effect of the war on the prices of energy, generating higher costs

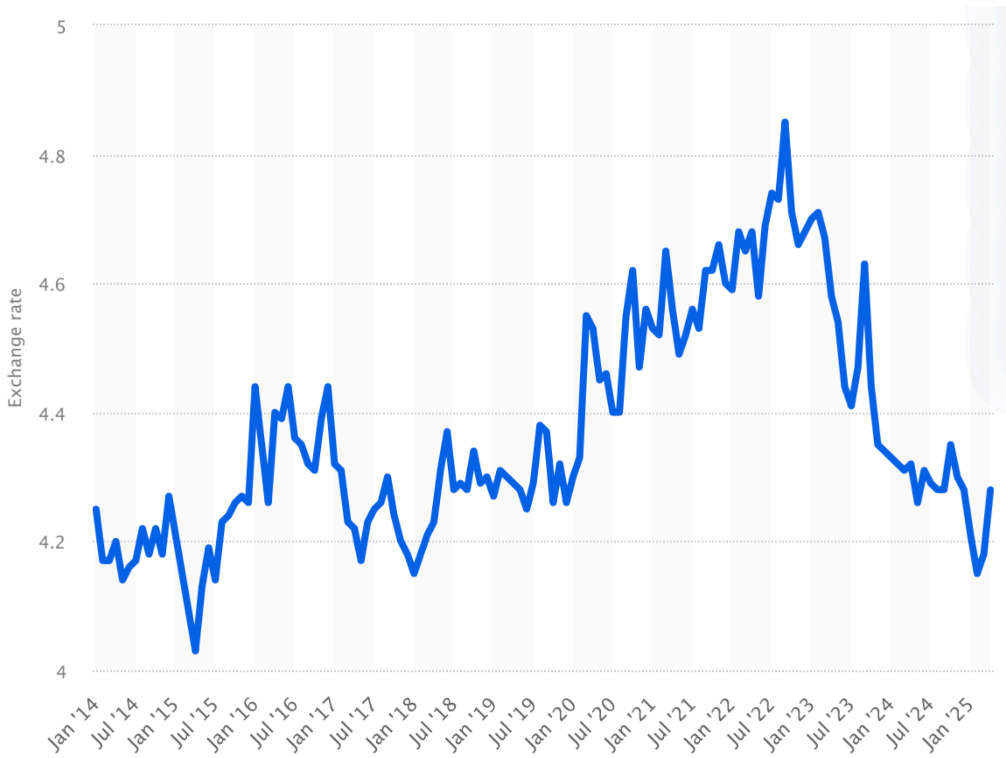
[191] European Commission. (January 9, 2025). Average prices of heating gas oil in Poland from 2005 to 2024 (in euros per 1,000 liters) [Graph]. In Statista. Retrieved April 04, 2025, from https://www.statista.com/statistics/597574/heating-oil-price-poland/

of production to producers and higher living costs of household consumers, tended to have a stronger impact on those countries, that were more dependent on outside agents for energy supplies, in this case Russia and the dependency of European countries on Russian imports. At the same time this higher energy costs for economic agents, clearly motivated the countries to diversify their energy suppliers, but also look at the alternative energy sources, which in the long run might bring significant cost advantages to the economies. It will likely be a driving motive for the development of new technologies and higher investments in energy transformations of countries, including Poland, in renewable energy sources.

The last two subchapters of the economic and social consequences of war in Ukraine on Poland chapter, will focus on showing and explaining how and what each of the effects of war, starting from the inflow of refugees, rising prices of fertilizers, supply side cuts, trading problems and very volatile and high rises in the prices of energy, have impacted the development of aggregate, macroeconomic indicators, including the effect of these factors on the inflation rate and the economic growth (measured by GDP growth) in Poland.

Exchange rate

Diagram 16: The exchange rate of Euro (EUR) to Polish zloty (PLN) 2014-2025[192]

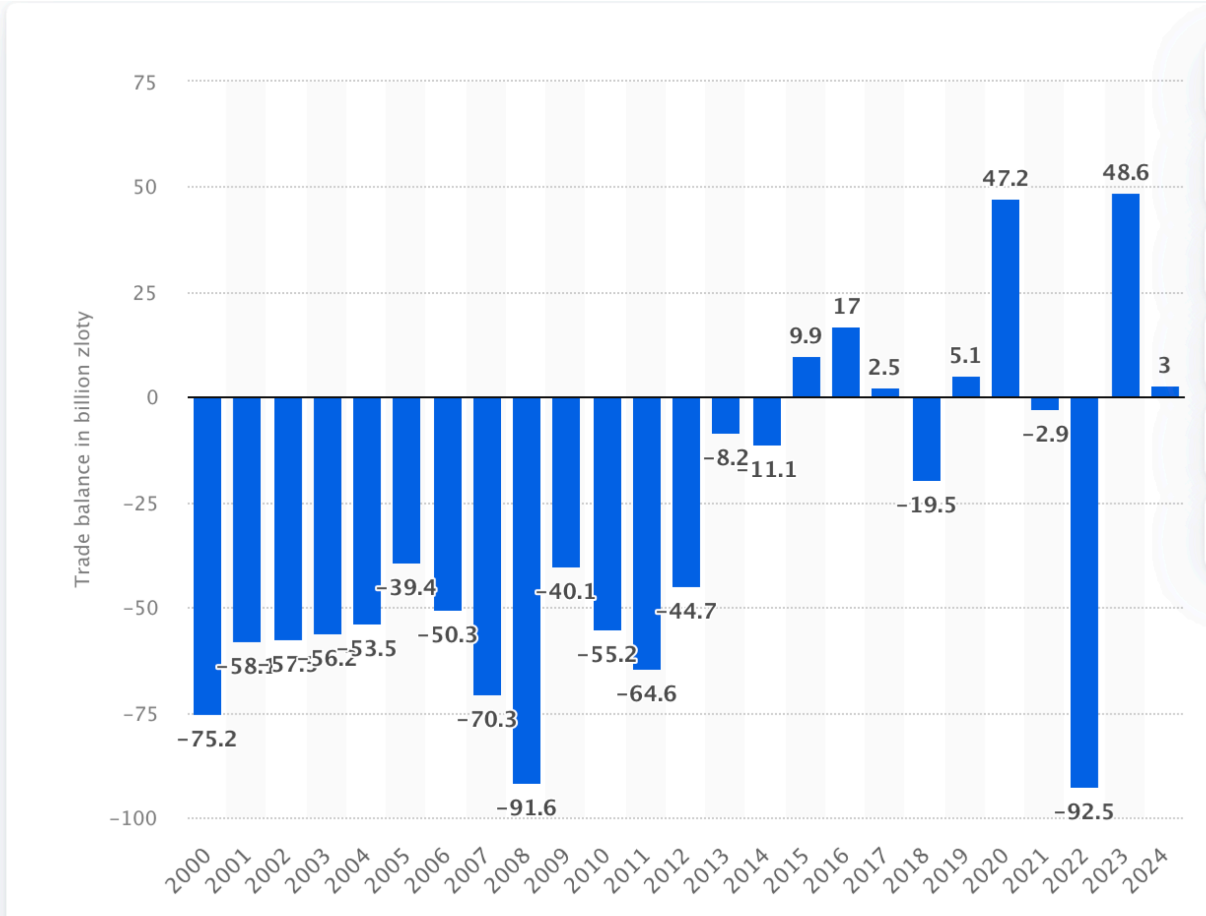


[192] ECB. (May 2, 2025). Euro (EUR) to Polish zloty (PLN) monthly exchange rate from February 2014 to April 2025 [Graph]. In Statista. Retrieved May 30, 2025, from https://www.statista.com/statistics/438241/euro-to-polish-zloty-monthly-exchange-rate/

Over the last ten years, the exchange rate of the Euro to Zloty, was generally ranging from 4 to 4.4. Firstly, the outbreak of COVID-19 pandemic, has caused an elevation of the exchange rate above its usual exchange rate, namely the Polish zloty, notably depreciated against the Euro. Importantly, however, the Polish zloty depreciated by a higher amount after the outbreak of war in Ukraine, reaching its peak in September 2022 of 4.85 zloty per 1 Euro. The depreciation of the zloty against the Euro, fall of value of the zloty has made the Polish imports relatively more expensive and exports relatively less expensive. This might have been the contributing factor, for the balance of trade in goods being negative only in 2022, while returning to positive values already in 2023. This lower value of the zloty has led, to what will later be described, an intervention of the National Bank of Poland on the foreign exchange market, to raise its value as to preserve the exchange rate stability of the zloty.

Foreign Trade

Diagram 17: "Foreign trade goods balance in Poland from 2000 to 2024 in billion zloty"[193]

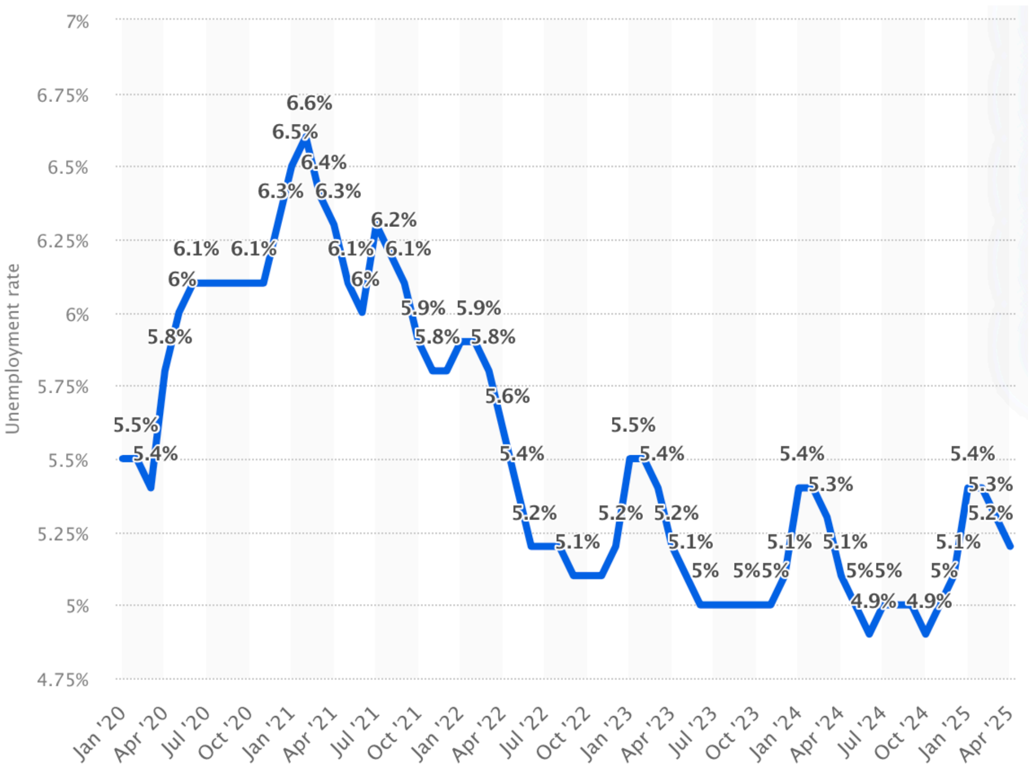


[193] bankier.pl, & Central Statistical Office of Poland. (February 14, 2025). Foreign trade goods balance in Poland from 2000 to 2024 (in billion zloty) [Graph]. In Statista. Retrieved May 30, 2025, from https://www.statista.com/statistics/1095981/poland-foreign-trade-goods-balance/

Over the three years before the outbreak of war in February 2022, Poland was mostly a net exporter of goods. Noticeably however, the war has caused wide-ranging consequences on the Polish economy, manifesting itself in various channels, including the exchange in goods with other countries. After the outbreak of war, the Polish economy, became mainly an importer of goods in 2022, leading to a negative effect on the balance of trade and consequently on aggregate demand in 2022. Very quickly however, the trade balance has recovered already in the next year, 2023, when Poland was again as in earlier years a net exporter of goods, bringing a positive effect on aggregate demand.

Unemployment Rate

Diagram 18: Registered unemployment rate in Poland 2020-2025[194]



Poland, since many years is among the countries with one of the lowest unemployment rates in the entire European Union. Over the last five years, the unemployment rate in Poland has not exceeded 6.6% and over the last two years did not go over 5.5%. In February 2022, when the war between Ukraine and Russia has started, the unemployment rate was at 5.9%. The effect of war in following months, was actually a sharp fall in the unemployment rate to 5.1 % in September 2022. In the later months, unemployment has fluctuated but has not exceeded 5.4% in any months until April 2025. The result of this, was that more people were economically active, bringing positive stimulus to the Polish economy. Thus, the war did not

[194] Central Statistical Office of Poland. (May 26, 2025). Monthly registered unemployment in Poland from 2020 to 2025 [Graph]. In Statista. Retrieved May 30, 2025, from https://www.statista.com/statistics/1112606/poland-unemployment-rate-during-covid-19-pandemic/

lead to negative effects on the Polish labour market, the situation remained very favourable, became even better, after the arrival of large number of refugees from Ukraine, fuelling the Polish economy and increasing the supply of labour.

Price fluctuations

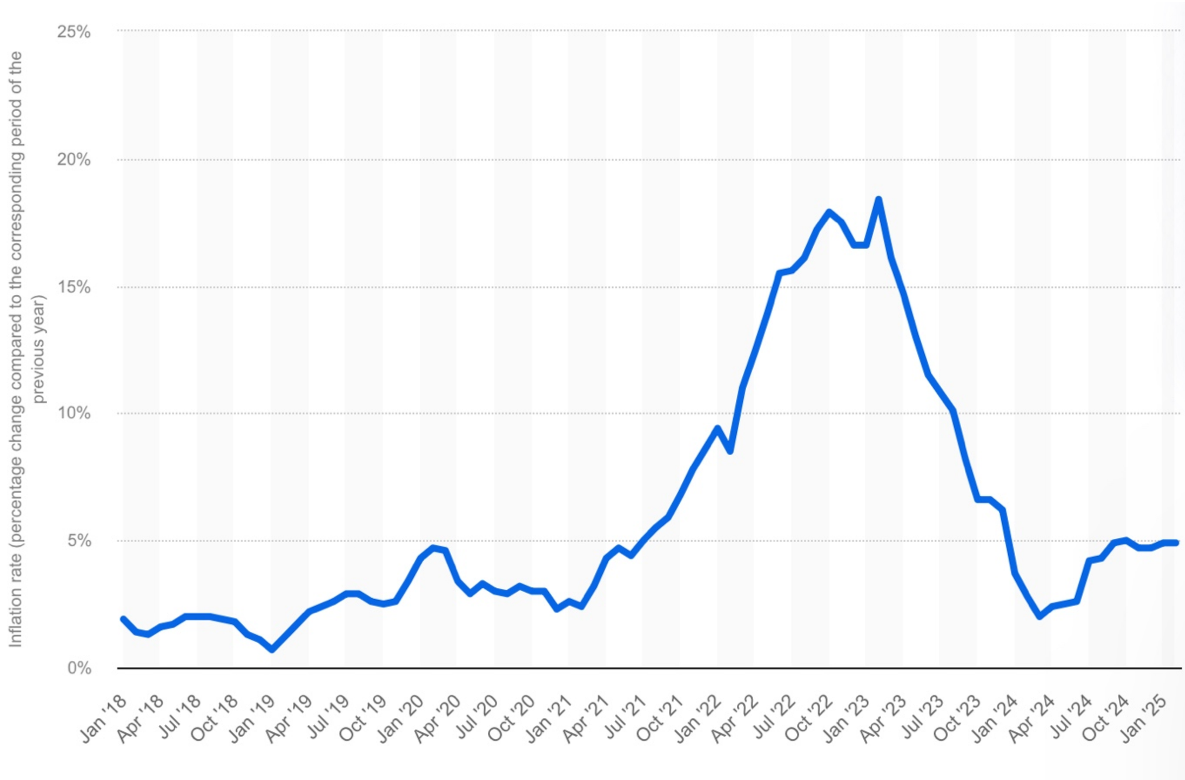
The outbreak of war between Ukraine and Russia in February 2022, have had widespread consequences on the functioning of the Polish economy. Noteworthy, is the fact that Poland, already before the start of the conflict was subject to a higher than targeted, inflation rate. This was still, a repercussion from the COVID-19 pandemic, which slowed down the economic activity of countries and have disrupted the supply chains. Nevertheless, the war has deepened the inflationary pressures across domestic industries in Poland

Bringing all the factors, described, explained and analysed, all of these have contributed to the building up aggregate price fluctuations in Poland. Firstly, as explained in the first subchapter of this chapter, one the effects of war on Poland manifested itself on the influx of Ukrainian refugees to Poland, these increase in number of economic agents, have had several influences on the price level. Primarily, it acted as a stimulus to consumption, as Ukrainians started to spend their income in Poland as well as their savings, leading to an increase in the aggregate demand in the economy and the building up of an inflationary pressure.

Similarly, the increase in the price of fertilizers, due to sanctions and their components scarcity, strengthened by the strong dependence on Russia in their imports, have led to an increase in the costs of cultivation for the Polish farmers, and the increase in the prices of food, a necessity good bringing an adverse impact in the wallets of all the consumers in the economy. Noteworthy, the consumers have not only been negatively affected by the increases in the price of food, but also some portion of consumers experienced lower qualities of food, connected with the inflow of grains from Ukraine, not meeting the EU standards and containing harmful substances.

Lastly, the rise in the prices of energy sources and thus energy itself, have had a negative effect on both the consumers and producers. For producers the cost of energy is a cost incurred by every firm each month, due to the volatility of the prices of energy, following the outbreak of war in 2022 and a sharp increase in energy price, the firms ‘s costs of production increased. Similarly to producers, for consumers energy is also a necessity, used for heating, lighting purposes and others. This, increased the living costs of families, particularly hitting those, in the lowest income classes.

Diagram 19: "Monthly consumer price index (CPI) changes of goods and services in Poland from 2018 to 2025 (in percentages)"[195]



The inflation rate in Poland, measured by the Consumer Price Index, as the change in the price of goods and services, have risen very quickly and sharply, following the outbreak of war. Just one month after the start of the conflict, in March 2022 the inflation rate was 11%, compared to the month in which the war began, in February 2022, when the inflation was 8.5%. However, the peak in the inflation rate, took place in February 2023, reaching 18.4%, the highest inflation rate recorded over the last 25 years. The last year, in which the inflation rate reached, such a high level was 1996. This inflation rate led to a significant loss in the purchasing power of consumers in Poland.

Gross domestic product

Similarly, as in the case of the inflation rate, the factors explained in the previous subchapters: the inflow of refugees, prices of fertilizers, Poland-Ukrainian trade conflict over agricultural products and energy prices, have all together influenced the aggregate level of economic activity in Poland, some in a positive, while some in a negative way.

On one side, war has had a positive impact on the Polish GDP, mainly via the inflow of a large number of Ukrainian refugees, as explained earlier, increasing the labour supply in the Polish

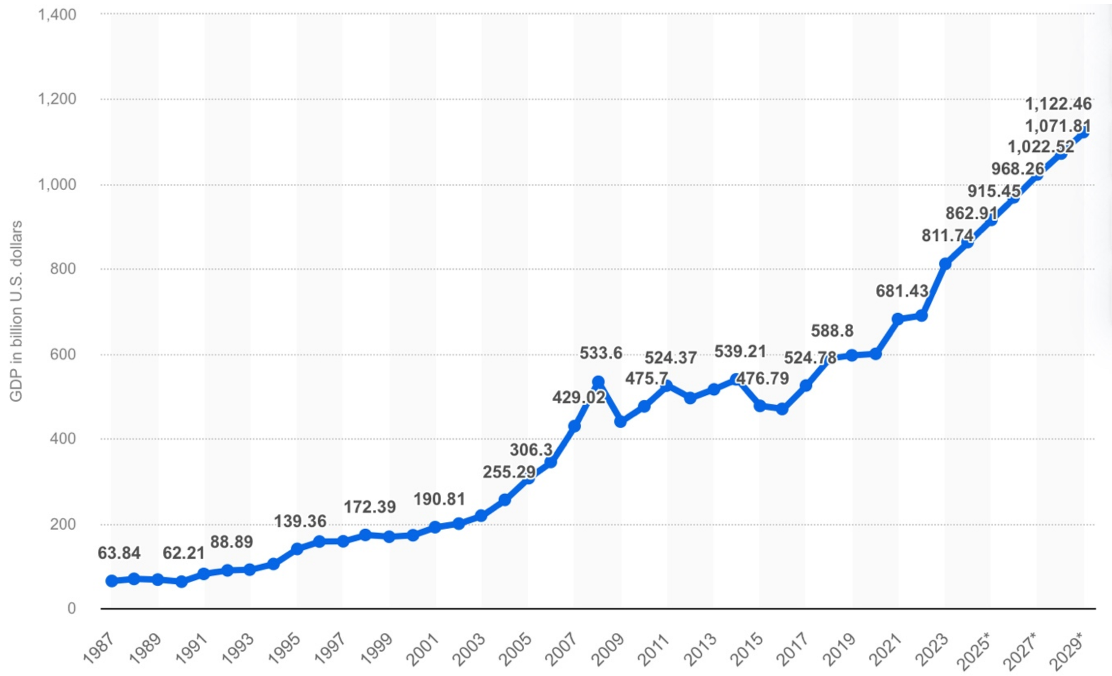
[195] Central Statistical Office of Poland. (March 14, 2025). Monthly consumer price index (CPI) change of goods and services in Poland from 2018 to 2025 [Graph]. In Statista. Retrieved April 05, 2025, from https://www.statista.com/statistics/1086390/poland-monthly-inflation-rate/

economy, while also leading to a positive demand stimulus and consumer spending and higher investments in infrastructure in Poland. Moreover, another positive driver for the economy was brought, through the increased spending of the Polish government on defence, mainly advantaging the sectors involved in the production of military equipment, but also of raw materials crucial in producing them, such as the metal industry.

Nevertheless, the war has also impacted negatively the functioning of the Polish economy in several ways. Primarily, via the previously described trade conflict with Ukraine, in the area of grains and other products sold on the agri-food market. This had very negatively impacted the Polish farmers, who were not able to sell their agricultural products, at a domestic price, that has been significantly lowered by the cheaper, lower quality and regulation inconsistent products from Ukraine. The farmers faced by this unfair competition, did not manage to sell the pre-war levels of their crops, and experienced a lower yearly profitability, leading to lower investment, harming the economic growth. Noteworthy, the war in Ukraine, and the resulting geopolitical tensions between the countries within the region, have had a negative impact on the confidence of investors, via a higher level of investment uncertainty, leading to lower foreign direct investments, mainly in the technology and software industries, bringing a negative impact on the economic growth in Poland. Lastly, the heavy reliance of Poland on the deliveries of energy sources from Russia, significantly increased the costs of energy in Poland, increasing the costs of production of firms, particularly those, heavy reliant on the use of energy in their operations. Similarly, the energy price rises have impacted negatively the consumers, whose living costs increased, disposable income fell and thus their spending decreased, negatively impacting the growth of the economy.

Thus, it is worthwhile to analyse, whether the positive effects of war on the Polish GDP have outweighed the negative effects, or it was the opposite way around.

Diagram 20: "Poland: Gross domestic product (GDP) at current prices from 1987 to 2029 (in billion U.S. dollars)"[196]

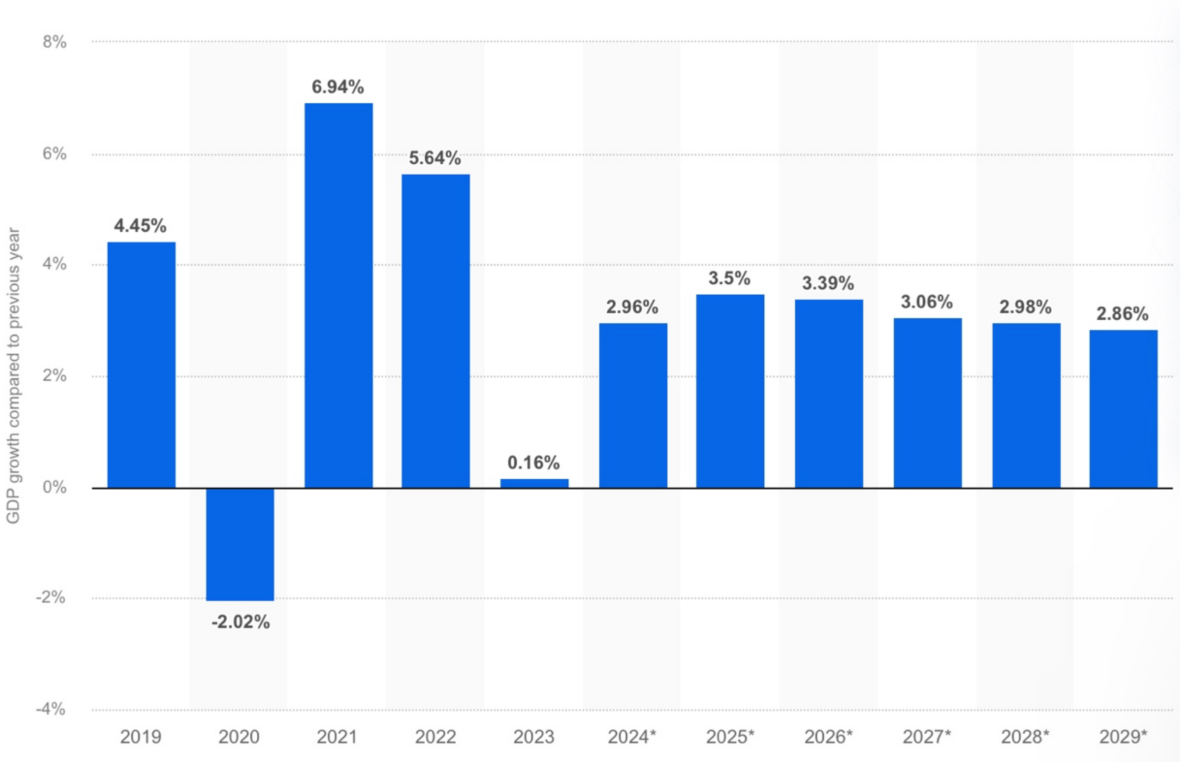


Starting with the data on the total value of goods and services produced in Poland at current prices (GDP), shows that the value of the Polish GDP, stabilised in the year in which the war started, in 2022, lowering the trend of growth in GDP, seen between 2020 and 2021. Very quickly however, because in 2023, a year after the start of war, the value of the GDP, started rising again at a faster pace. This can be largely explained by the fact, explained in the chapter on Ukrainian refugees' influx to Poland. Their participation in the Polish economy via consumer spending and investments in different markets, have given a demand stimulus, which has led to an increase in the value of GDP over the next years. In addition, the projected value of GDP over the next years, is clearly positive and this influx was definitely not irrelevant factor in this aspect.

In addition, it is useful and important to show the data for the real annual GDP growth trends before the outbreak of war and after the initiation of the conflict.

[196] IMF. (October 10, 2024). Poland: Gross domestic product (GDP) at current prices from 1987 to 2029 (in billion U.S. dollars) [Graph]. In Statista. Retrieved April 05, 2025, from https://www.statista.com/statistics/263588/gross-domestic-product-gdp-in-poland/

Diagram 21: "Poland: Growth rate of real gross domestic product (GDP) from 2019 to 2029 (in percentages)"[197]

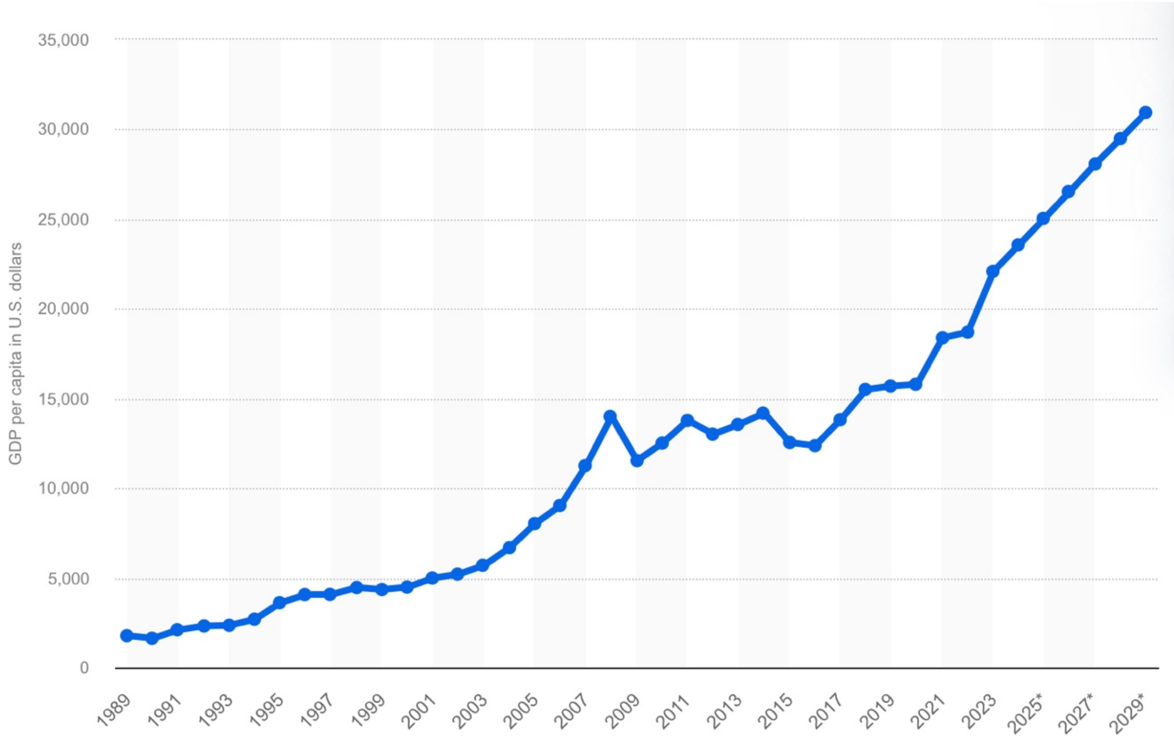


Clearly, the COVID-19 pandemic had a noticeable effect on the economic growth of the country, leading to a negative GDP growth in real terms. However, focusing on the war context, it can be seen, that in 2021 and 2022 Poland managed to go back to the pre-war positive economic growth trends. The beginning of war, with its wide-spread consequences, manifested themselves in a very high decrease in the pace of growth of the Polish economy in 2023. The very low real economic growth compared to previous ways, was primarily driven by the historically high inflation rate of 18.4% in Poland in 2023. On the other side, the projected years, predict an improvement in the pace of economic growth, stabilising at a level of around 3% year-by-year rise.

The analysis of the impact of war on the functioning and the prosperity of the Polish economy would not be complete, without bringing in the statistics on the changes of the GDP per capita over the recent years.

[197] IMF. (October 22, 2024). Poland: Growth rate of real gross domestic product (GDP) from 2019 to 2029 (compared to the previous year) [Graph]. In Statista. Retrieved April 06, 2025, from https://www.statista.com/statistics/376377/gross-domestic-product-gdp-growth-rate-in-poland/

Diagram 22: "Poland: Gross domestic product (GDP) per capita in current prices from 1989 to 2029 (in US dollars)"[198]



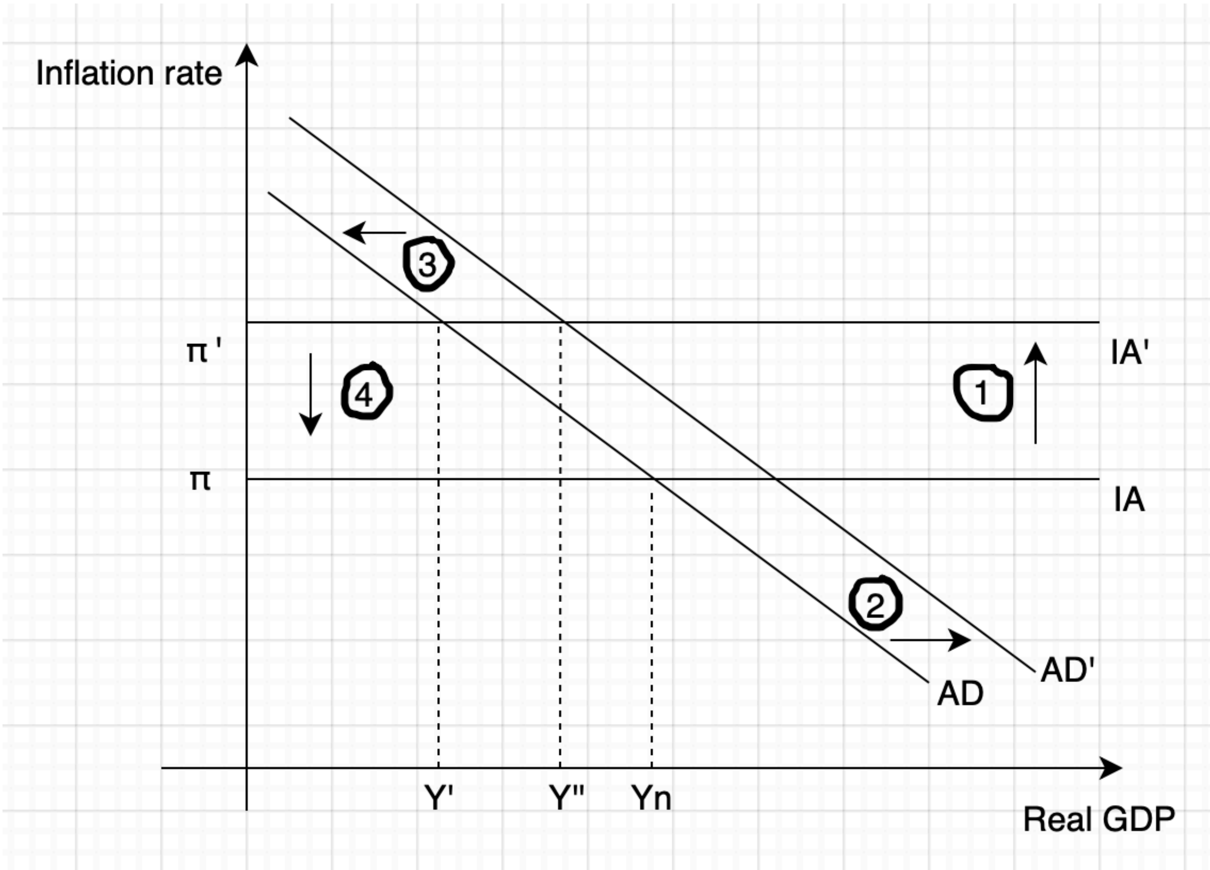
The GDP per capita, adjusted for inflation, is a very commonly used economic indicator, measuring the average income per person in a country. It is a very important indicator of the standards of living in the country, giving an insight on the amount of goods and services, that the citizens can afford in a country, yearly.

In the year before the war, 2021, the GDP per capita increased significantly from 2020, showing the recovery of the Polish economy from the COVID-19 pandemic, bringing back, the positive trend in the growth of the standards of living in Poland. The start of war in 2022, has caused the GDP per capita to stabilise in that year, even slightly increasing. A year after the outbreak of war, in 2023, the GDP per capita kept rising sharply again, showing a significant improvement of the standard of living of Poland citizens, despite the war across the border. Thus, it can be stated, that despite the rises in the living costs, due to increases in the prices of food and other goods, service and in the prices of energy, the average living standards of Polish families, increased. Furthermore, the projections for the upcoming years, unequivocally show the continuation in the growth of GDP per capita, adjusted for inflation.

[198] IMF. (October 22, 2024). Poland: Gross domestic product (GDP) per capita in current prices from 1989 to 2029 (in U.S. dollars) [Graph]. In Statista. Retrieved April 06, 2025, from https://www.statista.com/statistics/376392/gross-domestic-product-gdp-per-capita-in-poland/

Step-by-step effect of Ukraine-Russia war on the Polish Economy

<u>**Figure**: The effect of Russia-Ukraine war on the Polish economy</u>



Assuming that before the war the Polish economy was at the full employment level of output Yn at the inflation rate π:

Point 1: Immediate effect after the outbreak of war in Ukraine, a sharp rise in energy prices, mainly coal, gas, oil, agricultural and food prices, leading to an increase in the average price level of goods and services in Poland from π to π'.

Point 2: The rapid inflow of Ukrainian refugees to Poland, following the outbreak of war in February 2022, giving a positive stimulus to aggregate demand via an increase in consumption and an increase in investment in Poland by the Ukrainian refugees, mainly in the real estate.

Point 3: The effect of a contractionary monetary policy, involving an increase in the NBP's reference rate and other NBP's interest rates, starting in 2022 to counter the growing trend of the inflation rate.

Point 4: The gradually falling inflation rate, following the contractionary monetary policy stance but more importantly the effect of the gradually falling energy prices (a very important factor contributing to this was the ongoing Poland's diversification of energy sources away from Russia) and gradually falling agri-food prices.

Concluding remarks

Concluding, these chapter, having looked at the social and economic consequences, which Poland experienced after the outbreak of the War in Ukraine have hit the Polish economy and the society in a very wide range of areas, starting from the influx of Ukrainian refugees, their integration within the Polish population, their impacts on the labour force in Poland, as well as their involvement in prosperity and development of Polish domestic industries. Then, the significant impact of the agricultural products of subnormal quality, imported to Poland, hitting the Polish agricultural industry and the farmers. The supply side cuts of fertilizers, which increased the costs of cultivation of farmers, increasing the prices of food in the economy.

Moreover, the supply chain disruption and the high dependence of Poland on Russia in the deliveries of a wide variety of energy sources, leading to higher energy prices for all economic agents, increasing costs of production for producers and standards of living for household consumers. Lastly, taking all the individual factors shaping a larger picture, manifesting in the trends of the macroeconomic indicators including the inflation rate and the Gross Domestic Product. Having analysed and described all these aspects, it is now time to move to explain and evaluate the actions, policies and response of the National Bank of Poland (NBP), in light of the economic trends, that built up because of war.

Response of the Polish Central Bank to problems resulting from war

The National Bank of Poland, in the context of overcoming the effects of the war in Ukraine, played undoubtfully an important role. To demonstrate this, at the beginning, it is important to explain the context in which the National Bank of Poland, shaped its monetary policy strategy, for the year in which the war started.

National Bank's of Poland monetary policy, immediately before the outbreak of the war

While preparing the Monetary Policy Guidelines for the year 2022, the National Bank of Poland, formulated these, without a decisive knowledge of the incoming outbreak of war between Russia and Ukraine in 2022. Thus, the Monetary Policy determinants, for the year 2022, that the NBP analysed and prepared for, were still mainly connected to the continued slowdown of the economic activity due to the COVID-19 pandemic. Importantly however, the negative influence of various economic factors in 2021 on the operations of businesses was significantly lower, than in 2022[199].

[199] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

Additionally, an important factor, that was considered, included a fall in GDP of the most important and largest trading country in the euro area of Poland, that is Germany, which experienced a fall in its GDP in the first quarter of 2021. Additionally, the year 2021, was a turning point in the pandemic, in which the economic recovery started, mainly in the manufacturing and trading sectors of the economies. The start of the recovery phase has quickly led to a large increase in the average price of goods, compared to previous years, in which many economies were still in an ongoing economic recession. The inflation rate in Poland in 2021, reached a level of more than 5%. This higher growth in prices, was mainly attributed to the large rises in price of crude oil on the global market, because of its supply shortage. As the crude oil is a crucial energy source used in a wide variety of sectors, mainly in farming and in the production of food, the higher crude oil prices and thus, the rise in the costs of energy led to higher production costs, increasing the price of commodities for household consumers and producers[200].

Despite, the ongoing economic recovery phase, accompanied with a still significant uncertainty regarding the development of the COVID-19 pandemic and of economic variables, the majority of the central banks of the countries, including the European Central Bank, continued to pursue an expansionary monetary policy, accompanied with an increase in the government spending, further stimulating the economies. For example, the ECB, decided to still keep a negative interest rate of deposits, to discourage depositing funds. Similarly, the Federal Reserve of the US, also continued pursuing an expansionary monetary policy, by maintaining the interest rates very close to zero, despite seeing the changing growth trends of economic indicators, increasing inflation[201].

The forecasts, conducted by the National Bank of Poland in the first quarter of 2021, indicated that most global economies would continue to recover till the end of the year, while having a higher than targeted inflation rate, which will be offset in 2022. Simultaneously, the NBP, pointed out, that the development of the changes in the average prices and the how quickly the economies will recover, after the pandemic was subject to a very high uncertainty[202].

The state of the Polish economy was consistent with the ongoing trends in other countries. Poland experienced a large increase in its economic growth in 2021, reaching almost 7%. Importantly, the Polish economy was still largely influenced by the epidemics, mainly in the internation trade and service industries. While in the first months of 2021, the inflation rate recorded in Poland lied within 2.5 % with a band of +/- 1%, in the last six months of the year, the prices started rising sharply, reaching 8% in peak months. As in the case of other economies, this rise was mainly driven by an increase in global crude oil prices and thus energy, together with the difficulties involved in the international trade, due to pandemic restrictions and disruptions in the supply chains[203].

[200] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[201] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[202] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[203] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

Noteworthy, Poland, unlike other, particularly European countries, had a very optimistic and positive trend in its labour market, where despite the pandemic Poland managed to maintain low unemployment in 2021. Similarly, as the central banks in other countries at that time, the NBP continued its monetary expansion, which was supported by the Polish governments' fiscal policy, however, which scope was narrower, than that pursued during the peak of the pandemic in previous years. Namely, the government spending and financial assistance was provided to those industries, affected the most by the pandemic restrictions, such as the services industry, including tourism[204].

The Monetary Policy Council of the National Bank of Poland decided to maintain the NBP's reference rate at a low level of 0.1% in 2021 and continued its asset purchase programme of government debt securities, as well as refinancing the loans to enterprises. The end of 2021 and 2022, was predicted to proceed with the economic recovery of the Polish economy and the bettering of international trade and the services industry in Poland. Simultaneously, the inflation rate was expected to grow above the symmetric inflation target at the end of 2021, eventually decreasing as a result of the improving situation on the global energy markets[205].

Nevertheless, the Polish economy, similarly to other economies, was still predicted to be subject to the effects of the COVID-19 pandemic and the high levels of uncertainty regarding its future development at the end of 2021 and in 2022. High levels of uncertainty were connected with lower consumers and producers' confidence, slowdown in the economic recovery, imposition of stricter pandemic restrictions in the case of increasing number of infections. Additionally, this uncertainty, created problems of policymakers, regarding the choice of appropriate economic tools and measures to counteract negative economic consequences of the pandemic such as a lengthening economic recovery, or rises in the pace of price increases, caused by supply chains disruption, leading to commodity prices fluctuations as well as instability on the global energy markets resulting in the volatility of energy prices, together with the EU climate policies, further rising aggregate price levels in the country[206].

Similarly, as in previous years, the National Bank of Poland, formulated its monetary policy strategy, based on the Act on the National Bank of Poland in the Polish Constitution, which imposes several responsibilities on the NBP, including mainly ensuring financial stability, sustainable economic growth, and most importantly, maintaining the average price level, consistent with the inflation targeting strategy, setting a symmetric inflation target of 2.5%, with a band of +/- 1%. In addition, the Act on NBP, designated an additional task to the National Bank of Poland to support the policies of the government, as long as these do not compromise the NBP reaching its most important goal, that is ensuring the price stability[207].

[204] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[205] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[206] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[207] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

The formulation of the monetary policy in 2022, was strictly based on the previously described document of “Monetary Guidelines for 2022”. Thus, the main challenge for monetary policymakers was to ensure that the inflation rate does not exceed the inflation target in the medium run, while strictly analysing the sources of inflation, and flexibly employing different monetary policy instruments, best suited, for fighting inflation stemming from wide variety of sources. The main focus of the Monetary Policy for 2022, recalling the guidelines, focused on supporting the transition of the Polish economy to more advanced economies, ensuring that the changes in the average price level of goods and services lie within a target band, as the inflation in 2021 was more than 5%, and adapting appropriate measures to facilitate the Polish energy transformation towards renewable energy sources[208].

The NBP, besides ensuring that the inflation rate in Poland lies within a decided target, had also other important responsibilities, concerned with maintaining financial and macroeconomic stability. The reason behind this, is that the instability in these sectors, poses a threat to the stability of prices in the long run. Thus, the NBP’s monetary policy is designed to be in line with the macroprudential policy, focused on mitigating systemic risks and developing financial imbalances in the economy, and supporting the fiscal policy of the national government, however conditioned upon not compromising the NBP’s fundamental objective, that of price stability. Additionally, the Monetary Policy Council in 2022, pursued its monetary policy target of price stability under the floating exchange rate regime, which however did not restrict the ability of NBP to conduct the foreign exchange operations[209].

Lastly, it is crucial to emphasize, that the Monetary Policy Council, in charge of formulating monetary policy, considered in-depth, the time of monetary policy transmission mechanism, and not intervening too radically and quickly with respect to bringing the inflation rate, back to the target in the short run, having in mind the financial and macroeconomic imbalances it could have brought. Thus, the inflation target, determined by the NBP, is set over the medium run time horizon[210].

Polish National Bank monetary policy in 2022 – the year of war

The most important events shaping the monetary policy of the NBP in 2022, included initially the still-ongoing repercussions from the COVID-19 pandemic, namely the economic recovery following the peak of the crisis, leading to an increased economic growth and increasing average price of goods and service. The increase in average prices, was further deepened and accelerated, by the most important factor, shaping the monetary policy in 2022, the outbreak of the war between Ukraine and Russia in February 2022. The cumulation of this inflation-driving factors, have significantly increased the uncertainty among the economic agents, leading to a lower producer and consumer confidence. This, together with supply

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[208] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

[209] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[210] https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

chain disruptions, mainly from Russia, quickly led to a slowdown in the economic growth, and to the depreciation of the Polish currency (zloty) in terms of other currencies[211].

The crucial economic indicator, at which the NBP, looked the most at and focused its analysis on, was the inflation rate, running way above the inflation target set by the NBP. In some months, of 2022, after the outbreak of war, the inflation rate in Poland reached a level exceeding 16%, while the average inflation in that year was around 14%. The reasons for this high inflation compared to previous years (for example in 2021 it was only 5.12%), was the economic recovery building up inflationary pressure, which was deepened by the outbreak of war and its wide ranging repercussions such as the described in previous chapter, rises in energy prices, due to supply disruptions from Russia, that was the main energy supplier of Poland, the rises in commodity prices, due to higher production costs (higher prices of energy, fertilizers), but also demand stimulus from the inflow of refugees from Ukraine to Poland. Lastly, a crucial reason, was the fact, that the outbreak of war was not predicted by the policy makers in their "Monetary Policy Guidelines for 2022" documents, specifying all the monetary policy determinants, based on which the NBP, will shape its monetary policy. All these factors, contributed to a level of inflation, significantly above the aimed threshold[212].

Interest rates

In response to the growing uncertainty and lower consumers and producers' confidence in Poland, high inflation, caused by the disruptions of supplies, mainly of energy sources from Russia, after the outbreak of war, together with an inflationary pressure building up from the inflow of large number of refugees from Ukraine, and the simultaneously slowdown in economic growth in the country, the National Bank of Poland, namely the Monetary Policy Council, after analysing the incoming macroeconomic data for 3 quarters of 2022, deducted a very high inflation risk, above the set inflation target, over the time length of the monetary policy transmission mechanism, in the medium run. Thus, the Monetary Policy Council, decided to launch restrictive monetary policy measures, and the most important monetary policy tool, used by the NBP, were the interest rates[213].

Recalling one of the subchapters in the first chapter, the NBP, sets and has at its disposal, four main types of interest rates. The short-term interest rate, namely the NBP reference rate, serves as the core instrument of monetary policy. By changing this reference rate, the NBP signals its monetary policy stance and sets the yield on the bank's main open-market operations[214].

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211 https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf
212 https://nbp.pl/wp-content/uploads/2022/10/en_zal2022a.pdf

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214 https://nbp.pl/wp-content/uploads/2022/10/en_zal2016a.pdf

The second interest rate is the deposit rate, which shapes the interest paid to commercial banks by the NBP on their deposited funds with the National Bank of Poland. Simultaneously it determines the floor for POLONIA rate, the overnight interbank interest rate.

The third interest rate is the Lombard rate, which determines the interest paid by commercial banks to the NBP, for obtaining overnight credit from the NBP. Additionally, it sets the ceiling for the interbank rate – POLONIA rate[215].

Initially, it is important to emphasize, that the Monetary Policy Council, has initiated, rising the interest rates, already at the end of 2021. In the last quarter of 2021, the MPC, raised the NBP's reference rate three times, in total from 0.1% to 1.75%. However, as previously described, these decisions to increase the interest rates, were at that time driven by other factors, not yet from the economic consequences of war in Ukraine, which had not yet started at the time[216].

It was primarily motivated by the changing trends in the Polish economy after the COVID-19 pandemic, in 2021, there were clear signs of recovery taking place in the Polish economy, which together with a very positive situation on the labour market, have led to a significant rise in economic growth in Poland, like that seen before the pandemic. In addition, however, this increases in GDP, had an effect on the growing trends of the inflation rate, projected to rise, above the defined NBP's inflation target in the medium run. As a result, the Monetary Policy Council, decided to make these interest rate increasing decision, to ensure, that even though the short-term interest rate was above the targeted level, the time lag of the monetary policy transmission mechanism, will reduce the inflation in the medium run, to a level within the targeted inflation target band[217].

The outbreak of war however, had significantly complicated the projections, of the gradual reduction in the inflation rate, after increasing the interest rates. As previously described, the war has brought wide-ranging consequences, hampering the positive trend of economic growth in the economy and at the same time it significantly increased the short-term inflation, and notably boosted the risk of inflation in the medium run, running above the set threshold. Most notably, the as previously described, the war has significantly increased the price of goods and in particular agri-food products. This was the result of a disruptions in the supply of key inputs in the production process from Russia (on which Poland was heavily reliant on, before war), mainly energy sources such as oil, gas and coal, but also notably the fertilizers, crucial for agricultural cultivation. These disruptions, have led to increases in the price for these inputs on global and Polish markets, rising significantly the costs of production in Poland. As a result between March and September 2022, the prices of agricultural goods, measured by the agricultural commodity index, were approximately 60% higher than before the pandemic. Similarly, not of lower importance was the again rising uncertainty, similar to that during the COVID-19 pandemic, which as previously described

[215] https://nbp.pl/wp-content/uploads/2022/10/en_zal2016a.pdf

[216] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[217] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

weakened the consumers' and producers' confidence, leading to lower consumer spending and investments, resulting in lower aggregate demand economywide. Consequently, the GDP increase in Poland was lower, decreasing from 8.6% in the last quarter of 2021 to 6.1% in the second quarter of 2022[218].

Despite the negative impacts of uncertainty on consumption, the data showed the aggregate consumption spending remained high following the outbreak of war in Ukraine, and was attributed to the incoming refugees from Ukraine, stimulating aggregate demand and lower COVID-19 restrictions, compared to 2021. Similarly, the same was seen among the investment trends. Despite, the high uncertainty of producers, reducing investments and negatively impacting aggregate demand, these (investments) in aggregate terms have remained high, these as previously described, could have been easily attributed to the inflow of Ukrainian refugees, who besides increased consumption, have also used their funds, to make investment, via as aforementioned, in the previous chapter, setting up business, increased participation and investment on the housing and apartments market in Poland, and others[219].

Importantly, the state of the labour market of Poland, following the start of the conflict remained very positive, and did not worsen compared to the years before the war. The unemployment rate in Poland was very low in 2022 (around 5.3%). Noteworthy, it was lower than in 2020 (around 6.2%) and 2021 (around 6%), this is mainly attributed to the increase in the supply of labour on the Polish labour market, from the inflow of war refugees from Ukraine many of whom took up work in Poland[220].

Due to a sharp increase in the inflation rate in Poland, following the war and having consulted and analysed all the projections of macroeconomic indicators, mainly very high inflation risk running above the medium run target, the Monetary Policy Council of the NBP, decided to increase the NBP reference rate multiple times in 2022. The NBP reference rate increased from 1.75% to 2.25% in January 2022, to 2.75% in February 2022, to 3.50% in March, 4.50% in April, 5.25% in May, 6% in June, 6.50% in July and August and the last increase took place in September 2022, when the NBP decided to raise its reference rate from 6.50% to 6.75% and keep it at that level till the end of 2022[221].

[218] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[219] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

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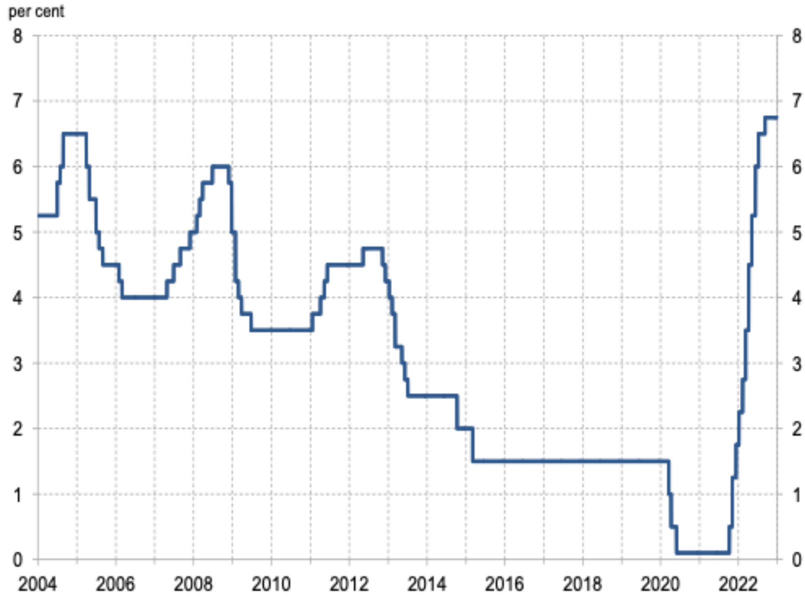
[221] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

Diagram 23: NBP's reference rate between 2004 and 2022[222]



Source: NBP data.

The NBP's reference rate at the end of 2021 (from September to December 2022), was the highest since 2004. The economic meaning of this rise is that the yields of government, and government-based debt securities have increased, making it more profitable for economic agents to purchase, for example NBP bonds, than to hold their funds in the form of cash. In such a way, the NBP, achieved the reduction in the M1 monetary aggregate supply in the economy, as a part of its restrictive monetary policy measures, to reduce the inflation rate and achieve its medium run inflation target. Similarly, the increase in the NBP reference rate, have increased the POLONIA rate, namely the interbank interest rate, at which commercial banks borrow funds from each other[223].

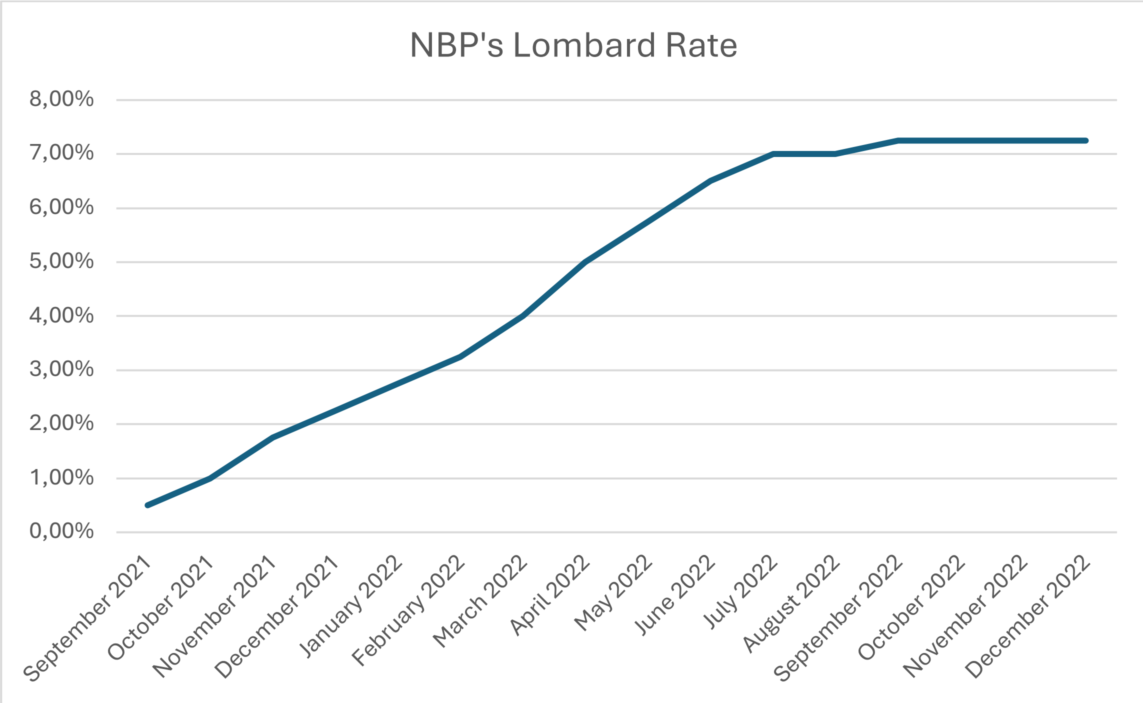
Similarly, as in the case of the NBP's reference rate, the MPC of the National Bank of Poland, made a decision to raise the NBP Lombard rate, that is the interest rates of commercial banks on the funds borrowed from the National Bank of Poland on an overnight basis, eight times in 2022. At the beginning of the year, the MPC, increased the Lombard rate by 0.5%, namely from 2.25 to 2.75% in January 2022, then to 3.25% in February, to 4% in March, to 5% in April, to 5.75% in May, to 6.50% in June, to 7% in July and the last increase took place, similarly as in the case of the reference rate in September to 7.25%, and rested till December 2022[224].

[222] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[223] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[224] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

Diagram 24: The Lombard rate of the National Bank of Poland between September 2021 and December 2022[225]



In total, the Monetary Policy Council of the NBP, increased the Lombard rate in 2022, from 2.75% at the beginning of 2022 to 7.25% from September to the end of 2022. The Lombard rate from September to December 2022, was the highest, since 2008. The meaning of this rise, is the increased costs of borrowing from the National Bank of Poland to the commercial banks, obtaining funds from the Central bank on an overnight basis. The increase in this type of interest rate, has significantly increased the percentage interest payment that commercial banks had to pay from the principal amount borrowed from the NBP. By this way, the loans from the NBP, became more expensive and less profitable for commercial banks, reducing the total amount of loans granted by the NBP. As a result, the NBP, reduced the total amount of funds injected in the economy via commercial banking activity and thus eventually reduced the inflationary pressures building up in the Polish economy, depending on the time length of the monetary policy transmission mechanism[226].

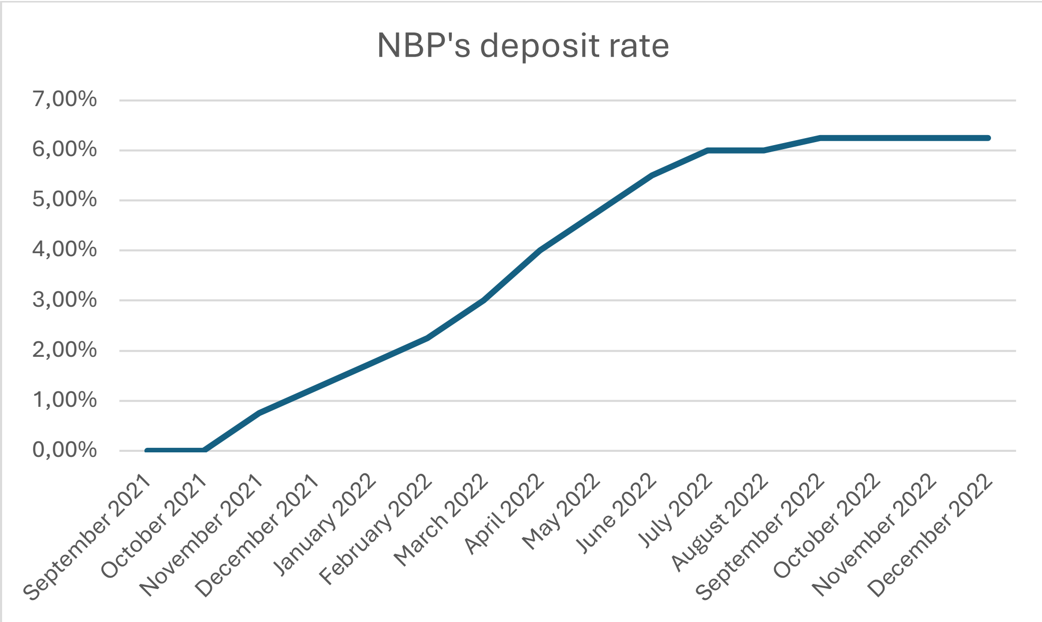
Lastly, the NBP, made a decision to increase the deposit rate, that is the interest rate on the principal deposited by the commercial bank with the Central Bank, the National Bank of Poland. The same as in the case of the previous two types of NBP interest rates, in 2022, the Monetary Policy Council increased the deposit rate eight times in total. In September 2021, the deposit rate was at 0%, due to a still ongoing slowdown of economic activity and low inflation, soon however, as in November 2021, it was increased to 0.75% and then to1.25 in December 2021 to counter the rising inflation and inflation risk exposure. In 2022, the National bank of Poland increased the interest rate on deposits, since January. From 1.25% in December 2021 to 1.75% in January, afterwards to 2.25% in February, then to 3% in March,

[225] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[226] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

to 4% in April, then to 4.75% in May, to 5.50% in June, after, in the next month, July to 6% and deposit rate increased lastly to 6.25% in September and lasted unchanged till the end of December 2022[227].

Diagram 25: The deposit rate of the National Bank of Poland between September 2021 and December 2022[228]



Since the beginning of 2022, the Lombard rate has increased from 1.75% in January to 6.25%, which stabilised and remained the same from September to the end of December 2022. The Lombard rate of 6.25%, recorded in the last four months of 2022, was the second highest deposit rate in the National Bank of Poland's history and the highest, since 2002. Noteworthy, the deposit rate, has been introduced and used as one of the interest rates, that the NBP's decides upon, since 2001. Thus, only in the second year of its functioning in the system it was set at a higher level, than in the last months of 2022. The increase in the interest rate on deposits, has affected the amount of interest that the commercial banks get paid by the National Bank of Poland, for depositing their funds with the NBP on an overnight basis. Thus, a higher interest rate, has led the commercial banks to receive higher interest payments for the principal amount, that they have deposited with the central bank. By doing so, the NBP, made it more worthwhile for commercial funds to deposit funds with the NBP, rather than lend these funds to economic agents. As a result, by rising the deposit rate, the NBP has indirectly reduced the amount of funds, borrowed via commercial banking activity to economic agents reducing the supply of funds available in the economy. Interestingly, the NBP, decided to launch restrictive monetary policy measures, mainly an increase in interest rate, much earlier than the European Central Bank and slightly later than the Czech Central Bank[229]. The earlier tightening of the monetary policy measures of the NBP, relative to ECB,

[227] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[228] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[229] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

might have been motivated by the fact, that the Polish economy was more quickly exposed to sharp adverse effects of war, alarming the NBP to take decisive actions.

Both the NBP's Lombard rate and the deposit rate, allows the financial institutions to borrow or deposit funds with the National Bank of Poland overnight. According to the data, on these standing facilities offered by the NBP, indicates that over 2022, commercial banks have obtained funds from the NBP via Lombard credit relatively rarely. Despite this narrow spread of usage, the amount of funds obtained in total via this credit channel was significantly higher in 2022, equalling to 62 million zloty than in 2021, when the aggregate amount was 10 million zloty. Furthermore, despite the higher rate of interest on deposits made with the NBP, the total amount of funds deposited by the financial institutions with the NBP, has decreased in 2022, compared with 2021. In 2021 the aggregate amount deposited was around PLN 3489 billion, while in 2021 was near PLN 3900 billion[230].

The increase in all three most important interest rates, described has had wide-ranging consequences on all economic agents in the Polish economy. Most importantly, it has led to a significant increase in the interest rate that household consumers and corporations pay the banks for borrowing funds. Consequently, the M3 aggregate money supply has increased at a slower pace than in previous years. The increase in M3 money supply was over 15% for the majority of 2020 and beginning of 2021, while at the end of 2022, the growth rate was only slightly above 5%. Similarly, the growth rate in the M1 monetary aggregate have also decreased, which includes cash, current deposits, and other highly liquid assets. At the end of 2021, the growth in M1 money supply was very high, reaching the highest rise since 2015, of over 35%. The rise of uncertainty, due to war and accompanied increases in interest rates, have rapidly lowered the pace of its growth, which was already only 10% at the end of 2021 and eventually started decreasing in nominal term starting from June 2022 and reaching the lowest growth rate of nearly -10% in the last quarter of 2022. The main interpretation of the fall in M1 monetary aggregate were the changing trends in the composition of deposits made by household consumers. Most of these economic agents decided to transfer their funds from the accounts holding current deposits to those with term deposits. These shift in the structure of deposits made by household, was primarily driven, by a significant increase in the interest rate in term deposits, allowing consumers to earn a notably higher interest, than in the case of more liquid current deposits. Despite a slower growth in the M3 monetary aggregate in 2022 compared to previous years, it is important to emphasize that the total value of M3, still increased from 2021. The main driving force between this growth, has been a growing uncertainty and rising inflation, discouraging the consumer households, firms and other economic agents from holding their funds in the form of highly liquid assets such as cash. Instead, they used these assets to invest in securities and agreements minimizing the loss in the purchasing power due to inflation. Notable example of this is the growth in the total value of the debt securities, with maturities of less than two years which have grown by almost 100% in 2022, compared to 2021[231].

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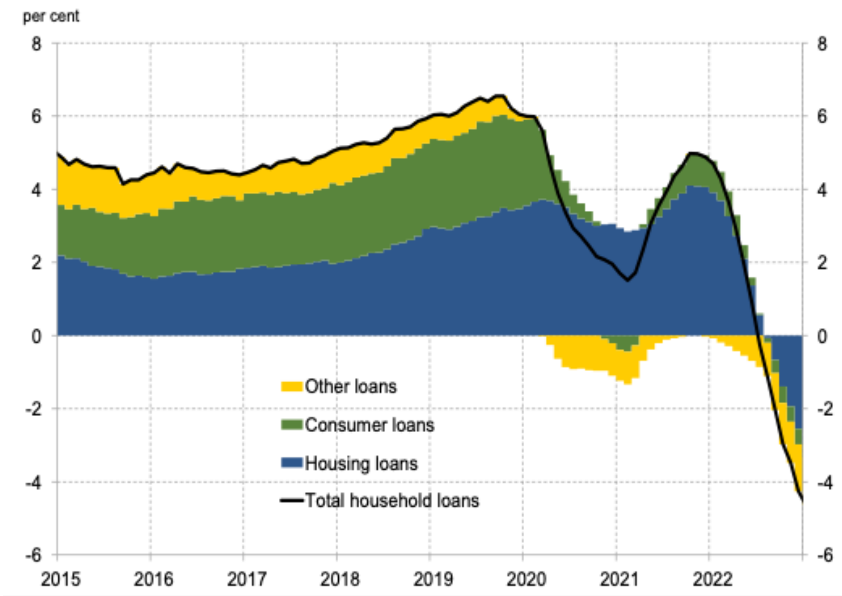
Additionally, the rise in three major interest rates, boosted the costs of borrowing for house purchases, the interest paid to households for depositing funds with the commercial banks as well as the loans used for consumption purposes. These rises in interest rates, has made loans to both corporations and household consumers much more expensive and less worthwhile, leading to a significant fall in the aggregate amount of loans granted.

Diagram 26: Growth in the various types of loans to household consumers[232]



Source: NBP data.

The trends of the growth in the aggregate number of loans granted to household consumers, because of the outbreak of war, is very clearly negative. Before the war, during the recovery seen after the COVID-19 pandemic, evidently the total number of all types of loans to consumers have increased. However, quickly this positive growth trend has been decelerated and soonly ended by the unexpected start of war and the simultaneous high rise in uncertainty among the consumers, accompanied by the gradually rising interest rates. Initially, after February 2022, the total number of loans have kept increasing, however at a gradually lower pace, than before the war. Eventually, at the middle of 2022, the total number of all types of loans granted to household consumers have decreased in aggregate terms. The greatest change in the trend of growth of household loans, was seen in consumer loans, were at the end of 2021, the growth of consumer loans accounted to 5%, whereas, at the end of 2022, the rise in this type of loans, was negative, namely around -3%. When looking broader, at all types of household loans, taken together, the growth rate fallen from around 5% in the last quarter of 2021 to more than -4% at the end of year 2023[233].

The changes in the key interest rates have significantly impacted not only, as previously described corporations and consumers, making it more expensive for them to borrow funds

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from banks, but also have negatively impacted the operations and the funds available to disposal of the commercial banks and other financial institutions. The liquidity surplus recorded in 2022, was significantly lower than in 2021. For example, “The average daily level of funds at the disposal of the banking sector in excess of the required reserve stood at PLN 236,600 million in December 2022 and was PLN 17,266 million lower than in the corresponding period of 2021”[234], thus the aggregate amount of funds that the financial institutions, could circulate and inject in the economy have decreased year by year by over 7%. The changes in the amount of liquid funds at the disposal for the banking activities in Poland, was primarily driven by a higher than in 2021 reserve requirement ratio, which will be discussed later, but also by a rise in the aggregate amount of currency circulating in the economy, especially present during the first weeks after the outbreak of war between Russia and Ukraine, when a very high portion of Ukrainians, who entered Poland, conducted foreign currency exchanges of Ukrainian currency (hryvna) to the Polish zloty[235].

Nevertheless, the National bank of Poland also conducted certain operations, which increased the liquidity surplus available in the banking sector. The main driving force for this positive trend, were the foreign exchange operations, such as the trading of foreign currency by the NBP and the Polish Ministry of Finance. The vast majority of the foreign exchange transactions included the NBP’s sales of other foreign currencies to the Commission of the European Union. Overall, these types of transactions, have contributed to a rise of funds to PLN 28,846 million available to the activities of commercial banks[236].

Consequently, the fall in the aggregate amounts of funds available to banks in conducting their operations have also reduced the daily’s average amount of short-term monetary policy operations by almost 12,500 million compared to the previous year, 2021[237].

Interest rate and inflation after the outbreak of war

The data under analysis by the National Central Bank of Poland in the first half of year 2023, has shown that, there has been a continued slowdown in the global, including the Polish economic activity, caused by the war in Ukraine, as well as the restrictive monetary policies of central banks. This slowdown, however, was less significant and sharp, compared to the year, in which the war outbroke, in 2022. Consequently, the record-breaking energy and food prices from 2022, were still much higher than before the outbreak of war but have significantly decreased from 2022. This has been attributed to the improvement in the functioning of supply chains and diversification of energy sources. As a result of a restrictive monetary policy, conducted by the central bank in 2022, manifesting itself mainly in elevated interest rates, the inflation rate in Poland at the beginning of 2023, started decreasing, there has been disinflation. Over the year 2023, the CPI inflation in Poland decreased from over 18% at the beginning of 2023 to around 10% in August 2023, decreasing even more, to 6

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percent at the end of the year. The analysis of the National Bank of Poland, pointed out that the main reason for these decline, has been a fall in the cost pressures, caused by the supply side shocks from 2022, together with the fall in the aggregate demand in the Polish economy, slower than in 2022, increases in the average prices of food and energy prices, as well as an increase in the value of the Polish zloty against other currencies, namely the appreciation of the zloty. In addition, the forecasts of the NBP, predicted a continued, gradual decline of the inflation rate in 2024, assuming the NBP have kept the interest rates at the level, determined at the end of 2022, would have fallen within the NBP symmetric inflation target of 2.5%[238].

The NBP, also pointed out on the data regarding the changes in the economic activity, measured by the GDP growth. In the first half of 2023, Polish GDP growth, continued to fall but as previously mentioned at a slower pace than in 2022. Importantly, the GDP growth recorded by the NBP in the first quarters of 2023 was lower, than the amount that has been previously projected by the bank, for example the GDP fell in the second quarter of 2022 by 0.6%, while it has been predicted that it would fall by only 0.1%. Additionally, the GDP growth in the first six months of 2023, indicated a negative GDP growth, which decreased from 2.8% in the last months of 2022 to -0.4% in the first three months of 2023. This fall has not only resulted from the supply shocks, uncertainty and other consequences of war, but also from the restrictive monetary policy from 2022, which significantly increased the interest rates, making the borrowing of the economic agents relatively more expensive than before the rise, contributing to lower consumption expenditure and investment, negatively impacting the aggregate demand and consequently, GDP growth. As a result of these results and findings, including a projected continued gradual fall in the inflation rate, the National Bank of Poland, led by the Monetary Policy Council, decided not to change the level of interest rates in the first six months of 2023[239].

Noteworthy the NBP reference rate, set at a high level of 6.75% in 2022, was the longest kept interest rate unchanged, following an increase in the NBP’s history. However, eventually the Monetary Policy Council, voted to decrease the interest rates in the second half of 2023. These was primarily driven, by the fact that a disinflation, that is fall in the inflation rate in 2023 compared to 2022, together with a decrease in the inflation expectations of economic agents made the monetary policy relatively more restrictive, from that when inflation was much higher[240].

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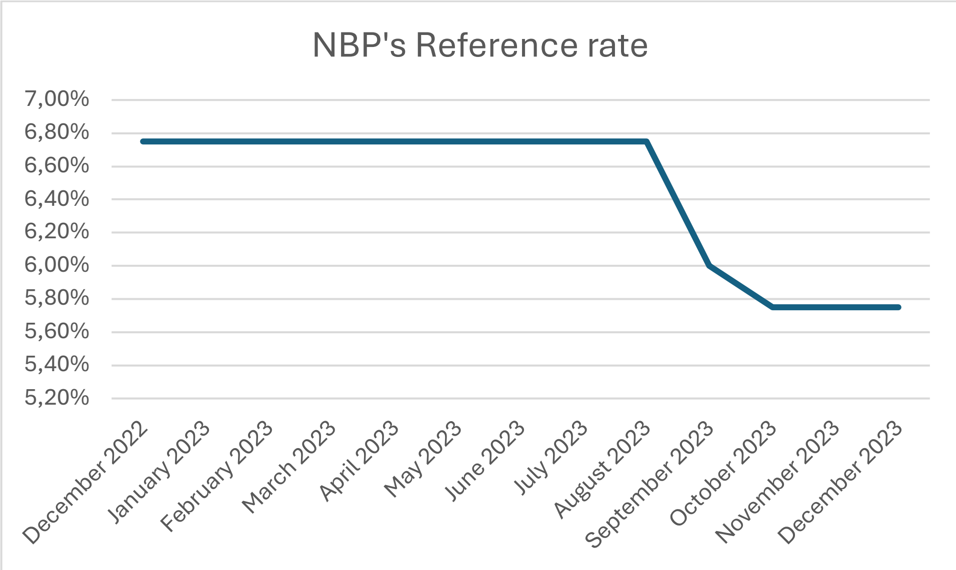
Diagram 27: NBP's reference rate in 2023[241]



The NBP's reference rate, at the beginning of 2023, was kept unchanged since the increase to 6.75% on September 2022, eventually after having analysed the incoming information regarding the gradually falling inflation rate and inflation expectations, the MPC, decided to vote for a decrease in the NBP's reference rate in September 2023, lowering it from 6.75% to 6%, and in October 2023 to lower it to 5.75% and then to maintain it unchanged till the end of 2023. These gave a clear stance of the NBP, that is the situation is under control, but the severeness of the restrictive monetary policy, initiated in 2022, had to be loosened after a very strong fall in the inflation rate and the very favourable future projections. The reduction in the NBP's reference rate, has led to a reduction of the interbank interest rate, the POLONIA rate, at which commercial banks and other financial institutions borrow funds from one another[242]. Interestingly, due to the later tightening of the monetary policy of the ECB, compared to the NBP in 2022, the ECB actually raised its interest rates in from January to July 2023 (while NBP kept them at an unchanged level) and in September 2023, exactly contrarily to what the NBP did, namely reduced its interest rates at that same month. This relation suggests, that that NBP and ECB were during that year, 2023, at different stages in fighting against elevated inflation rate. Earlier contractionary measures implemented by the NBP lowered inflation projections in the Polish economy faster, leading to loosening the monetary policy measures in the second half of 2023, while in the Eurozone, the monetary policy of the ECB had to be further tightened, due to the then higher than in Poland inflation expectations and projections in the Eurozone[243].

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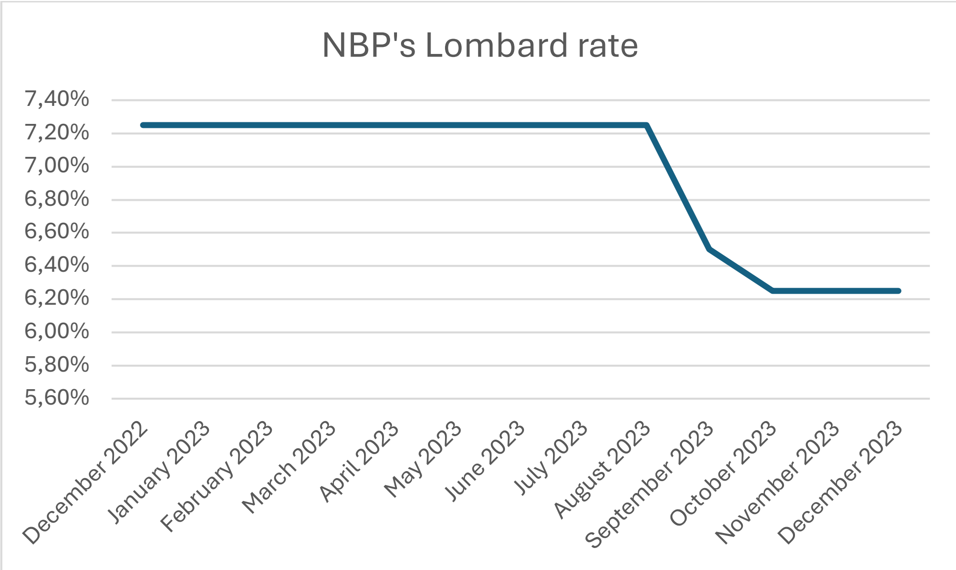
Similarly to the reference rate the National Bank of Poland, decided to lower the Lombard rate, that is the interest rate incurred by financial institutions, when borrowing funds from the NBP.

Diagram 28: NBP's Lombard rate in 2023[244]



Similarly to the NBP's reference rate, the Lombard rate was also kept unchanged after the increase to 7.25% in 2022. In the last quarter of 2023, the NBP decided to lower the Lombard rate, in September 2023, from 7.25% to 6.50% and then in October to 6.25%, and kept the same till December 2023. This decrease meant that the financial institutions incurred lower interest payments, when obtaining funds from the NBP, given the certified and accepted collateral. As a result, it increased the total value of funds, that the NBP borrowed to financial institutions in 2023, stimulating a slow, but higher growth in M1 money supply in 2023, compared to 2022. The usage of the Lombard credit, by the financial institutions, including the commercial banks was low in 2023, even though higher than in 2022, by around 44%[245].

Lastly, the Monetary Policy Council of the NBP, made a decision to also lower the interest rate on overnight deposits made by commercial banks and other financial institutions with the NBP.

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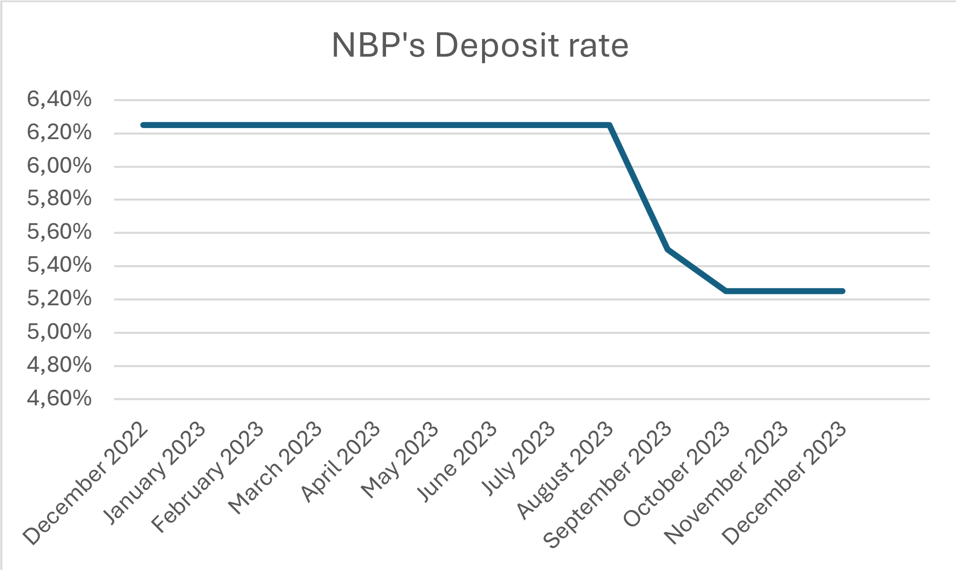
Diagram 29: NBP's Deposit rate in 2023[246]



To make the restrictiveness of the monetary policy under a lower inflation rate in 2023 relatively equal to that introduced in 2022, when the inflation rate was higher, the NBP, also decided to lower the rate of interest on overnight deposits made with the NBP. In this way, the NBP, made it relatively less worthwhile than in 2022, for financial institutions to hold their funds in the form of deposits with the NBP, and instead invest in other fields such as government bonds. Over the year 2023, the NBP, reduced the NBP deposit rate, twice, once in September 2023, from 6.25% to 5.5%, and in October to 5.25%, maintained till the end of 2023. Over that year, the aggregate value of funds deposited with the National Bank of Poland on an overnight basis, decreased from 3,488,729 million zloty in 2022 to only 1,913,437 million in 2023, meaning a decrease of over 45%. Thus, the commercial banks and other financial institution, were significantly less incentivized to depositing funds with the NBP, and rather used these for other operation, these fall, has also resulted in an elevated liquidity surplus, much higher in 2023, than in 2022, allowing banks to inject more money into the economy, indeed all types of money supply have increased in 2023, compared to 2022 (M!, M2 and M3 money supply), showing a partial weakening of the restrictiveness of the monetary policy[247].

NBP's monetary policy and its impact on Poland's economic situation in 2022-2024

The macroeconomic data on the second half of 2023, analysed by the NBP, has shown continued trends observed in the first months of 2023, that is lower level of uncertainty in the economy, slower fall in economic growth and a gradually falling, as projected before, further disinflation, taking place in the Polish economy, which notably was much quicker than in other economies in Europe, particularly in the countries, bordering with Poland. Nevertheless, the incoming information to the NBP, regarding the economic growth in Poland, was not as optimistic as in the case of the inflation rate. The data on macroeconomic

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variables in 2023, indicated a higher than projected fall in the economic growth. For example, in the third quarter of 2023, the gross domestic product increased by only 0.5%, compared to the percentage projected of 1.2%., accompanied by a significant fall in domestic aggregate demand, of over 4%. Nevertheless, even though the increases in GDP, were below the amounts, that have been previously projected, there has been a notable improvement in GDP growth, since the first half of 2022, where in some quarters, the GDP growth rate, was negative. According to the National Bank of Poland projections, the GDP growth, was predicted to continue rising in the last months of 2023[248].

The NBP, projections, regarding the future price developments in the second half of 2023 and further, were confirmed by the CPI inflation rate data on the second half of 2023. In the last two quarters of 2023, there has been a continued gradual fall in the inflation rate, initiated in the first half of the year, which by the end of 2023, fell to only 6.2%, compared to over 18% recorded in February 2023. Similarly, as the fall in the inflation rate in the first half of the year, the decline was attributed to lower than in 2022 and in the first quarters of 2023, supply shocks, supply chain disruption, falling prices of food, drinks and agricultural goods, and to a lower than previously extent, lower energy prices. Moreover, not of a lower importance for the falling inflation was the effect of the NBP's strong restrictive monetary policy initiated at the end of 2021, stronger in 2022 and continued over the 2023. The significant rise of the interest rates seriously reduced the lending activities of households and financial and non-financial institutions, mainly the amount of house loans granted. The CPI inflation recorded in the third and fourth quarter of 2023, without taking energy prices into account was significantly lower, than the amount initially projected. In addition, the value of the Polish currency, the zloty continued to rise on the foreign exchange markets, similarly as in the first six months of the year, but at a higher pace. The forecasts made by the NBP, on the subsequent quarters and the next year, 2024, have predicted an ongoing disinflation. In addition, the information on the consumers' and producers' sentiments indicated a notable fall in the long run expectation, regarding the course of the inflation rate. Moreover, as previously mentioned the data indicated a still lower and weaker than before the war GDP growth rate, but starting to rise, compared to 2022 and the first quarter of 2023, nevertheless still below the projected values. Considering the data, showing a gradual fall in the inflation rate and the expectation among the economic agents on the future course of price changes, the probability that the inflation rate, measured by CPI in Poland, calculated by the NBP analysts, reached the NBP symmetric target in 2024 have notably risen. Moreover, the weakened growth in the GDP growth, lower than initially projected by the NBP, analysis, have led the Monetary Policy Council of the National Bank of Poland to vote in favour of reducing the NBP's interest rates in the last quarter of 2023, in September and October meetings, and in the subsequent months, due to a still high, even though lower uncertainty, and a favourable forecasts on meeting the medium run inflation target, the NBP decided to keep the interest rates at an unchanged, lower level compared to the end of 2022 and the first half of 2023[249].

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Noteworthy, is the change in the liquidity situation of the banking sector in 2023. The average amount of funds available to banks, over the amount required by the required reserve system have notably increased to 301,239 zl million at the end of 2023, compared to 64,639 zl in December 2022, meaning an increase of more than 300%, year to year. The meaning of this, is that commercial banks have had more funds available to conduct its operations, such as lending activities to households, firms and other banks. The NBP, explained that this large increase in the amount of liquid funds available, is a result of an asset purchase programme, in which the NBP purchased foreign currencies with as in the case of the previous year, mainly the European Commission. These transactions have also notably contributed to an elevated liquidity surplus of banks in 2023. Nevertheless, certain factors lowered the amount of fund available to the banks, one of such factors was an increase in the amount of money in circulation in 2023, which reduced the liquidity surplus by 6,500 million zloty. In aggregate terms, as previously describe, the surplus of funds in the banking sector, have remarkably risen in 2023, compared with 2022, consequently, this increase has expanded the daily average amount of short-term monetary transactions conducted by the NBP[250].

Open market operations

In addition to the changes in interest rates, affecting the amount of funds available in the economy, the National Bank of Poland, have also conducted open market operation, to further support its restrictive monetary policy stance throughout the year 2022. Similarly, as in previous years, the NBP conducted its OMOs, to pursue the main operational goal of monetary policy, that is to keep the interbank interest rate – the POLONIA rate, as close as possible to set NBP's reference interest rate. While conducting these types of operations, the National Bank of Poland, can directly influence the amount of funds available in the economy, in particular during the required reserve maintenance periods[251].

Over the year 2022, the National Bank of Poland conducted several open market operations, with the main aim being to reduce the excess amount of funds available to the banking sectors, used for the "creation of money" process, stimulating the economy. This has been done via the issuance of the government and government-based market securities. In 2022, these included the regular weekly issuance of NBP debt securities, mainly the NBP, which had a maturity of usually 7 days. In total the National Bank of Poland have made 53 main operations over the months of 2022. Nevertheless, the average value of the NBP bills, that the NBP issued in 2022, was around 5% lower than in the previous year, 2021. Furthermore, the main operations, have been accompanied by the fine-tuning operations, which the National Bank of Poland made 33 times over the whole year 2022. The fine-tuning operations consisted primarily of the sale of the NBP bills, whose interest rate was equal to that of the NBP's reference rate, which was dependent on the day in which the operation has been made. Among the 33 fine-tuning operations conducted in 2022, 12 consisted of operations at the end of the requirement reserve maintenance period, while the remaining

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21, conducted over other days within these periods. Unlike in the case of main operations, where the growth trend was negative between 2021 and 2022, the average value of the fine-tuning conduced on a daily basis was over 1000% higher than in 2021. Noteworthy, however the total value of the fine-tuning operations, made by the NBP, was significantly lower from the main market operations. The first one's total value equalled to less than 6 billion zloty, while the total value of main market operation was over 191 million zloty in 2022. In overall terms, considering all the open market operations, the total value of NBP bills issued via these operations was lower than in 2021[252].

Following the outbreak of war between Russia and Ukraine, in February 2022, there has been a growing uncertainty, despite the temporarily improvement of confidence during the post-pandemic economic recovery, among the economic agent's economy wide. Similarly to both consumers and producers, the higher uncertainty and difficulty in predicting the near future economic environment, commercial banks have increasingly continued to be very careful in managing their liquidity positions, mainly the composition of their investment portfolios and the amount of liquid funds they hold on to their accounts with the NBP[253].

After the start of war, there has been a clear trend among banks in investing the excess funds with the NBP, in the form of deposit, via the standing facility, or via purchasing of government and government-based securities issued by the NBP. Following the higher total amount of these operations conducted by banks but also other financial institutions, the corridor within which the interbank interest rate – the POLONIA rate deviates, have increased compared to first quarters of 2021. Since the last quarter of 2021 to the end of 2022, the width of the NBP corridor stabilised at a level of 1 percent (defined as a difference between the NBP's Lombard rate and the deposit rate) and was symmetric with the NBP's reference rate. Whereas, over the first three quarters of 2021 the width of the corridor was only 0.5% and was asymmetric to the NBP reference rate. Furthermore, in 2022 the POLONIA rate deviated twice more from the NBP reference rate than in 2021, namely by 0.32% compared with 0.16% in 2021[254].

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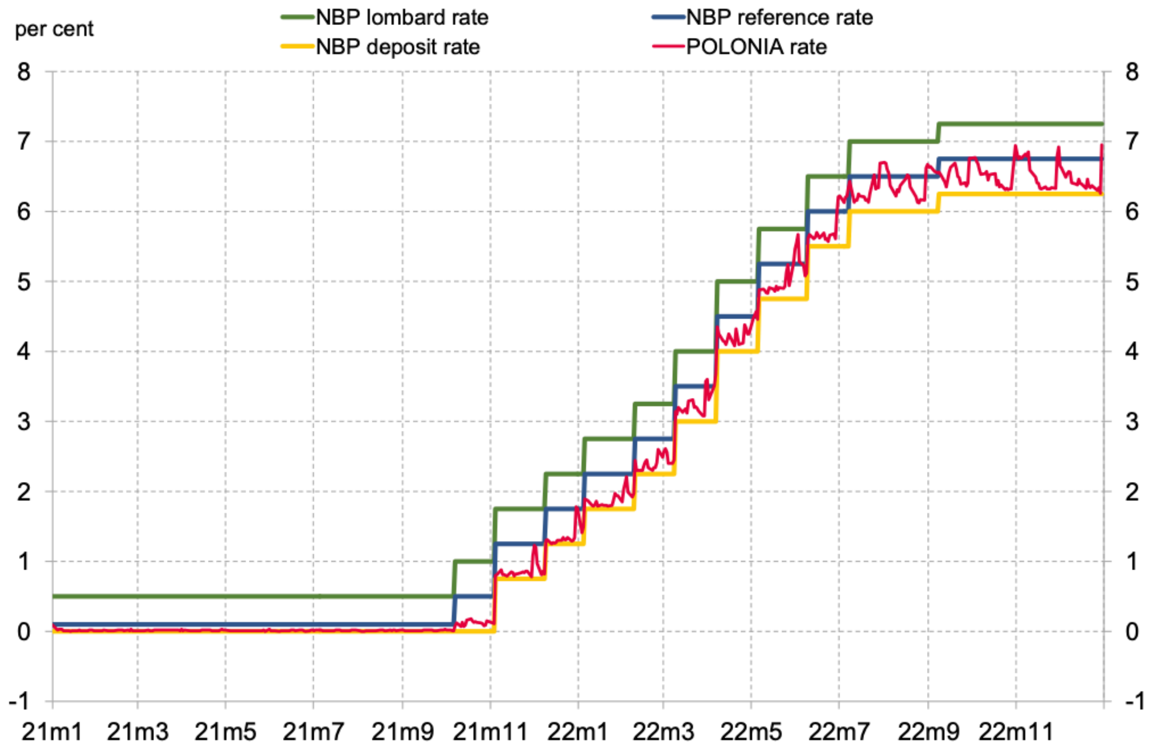
Diagram 30: "NBP interest rates and the POLONIA rate in 2021-2022"[255]



Source: NBP data.

The diagram clearly shows that the width of the interest rate corridor, was significantly wider in the second half of 2022, compared to previous periods. Additionally, there has been a notably higher variation of the POLONIA rate within the wider interest rates corridor around the NBP's reference rate.

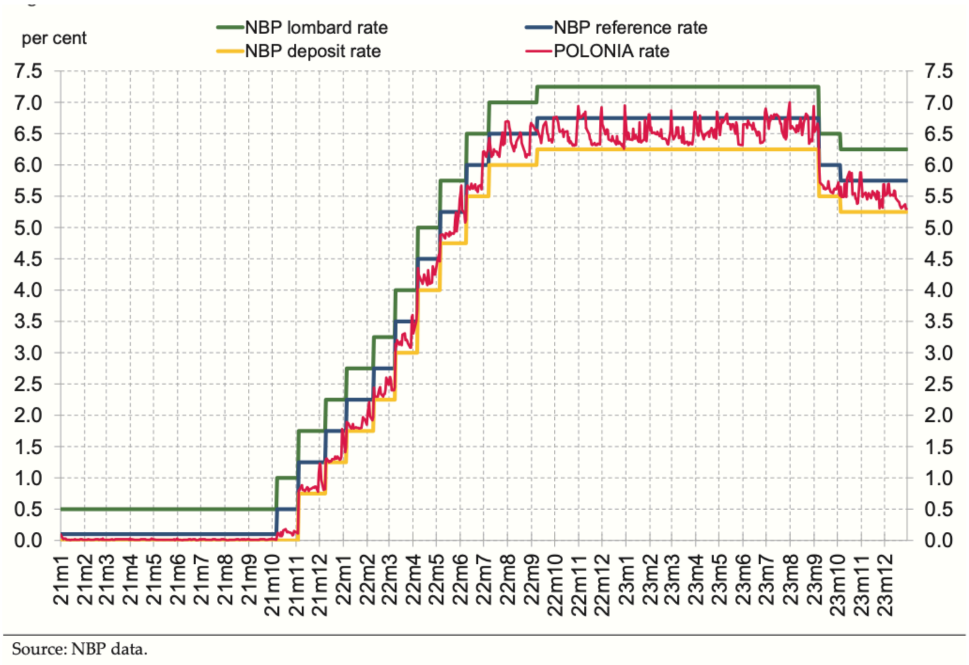
In 2023, in light of changing economic environment and the weaking of the slowdown in the economic activity, accompanied with a gradual and continuous fall in the inflation rate over the year, as previously described, in the second half of 2023, the NBP, decided to lower the interest rates twice in September and October, and keeping them unchanged till the end of the year. However, in addition to lowering the interest rates, the NBP, also conducted open market operations in 2023. Similarly, as the year before, the main aim of these, has been to maintain the NBP's interbank interest rate, closest possible to the NBP's reference rate, which has been lowered from 6.75% to 5.75% over 2023. Over the year, the National Bank of Poland, ran 52 main operations. Additionally, daily's average value of the NBP bills, sold by the NBP via main operation, have increased, compared to the previous year, by over 41%. Additionally, the National Bank of Poland, has conducted the fine-tuning operations via the NBP bills issuance to support the main operation in reaching its target. In total, the NBP conducted 47 of these operations, 12 of which were ran over the last days of the required reserve maintenance period, while 35, on different days within these periods. The average

[255] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

value of these operations conducted on a daily basis increased with respect to the previous year by almost 20%[256].

Thus, it can be seen that the banks, increased their funds allocation in the debt securities issued by the NBP, allowing the NBP, to keep the money supply restricted over the year, preventing the commercial banks, from holding large quantities of available funds for its operations, such as borrowing activities, stimulating aggregate demand and inflation.

Diagram 31: "NBP interest rates and the POLONIA rate in 2021-2023"[257]



The open market operations, conducted by the NBP in 2023, have resulted in the interbank interest rate - the POLONIA rate fluctuating from the reference rate, less compared to 2022, in which the deviation of the POLONIA rate from the reference rate was 0.3%, compared to 0.32% in 2022. On the other side, the wideness of the interest rate corridor, stayed the same, was 1.00%[258].

Reserve requirements

In addition to open market operations and the changes in interest rates, as aforementioned in the interest rates subchapter the National Bank of Poland have also influenced the required reserves that the commercial banks are obliged to hold with the NBP over the reserve maintenance periods. The main goal that the NBP pursued using the reserve requirement system was to stabilise the interest rates in the short run. Importantly, NBP

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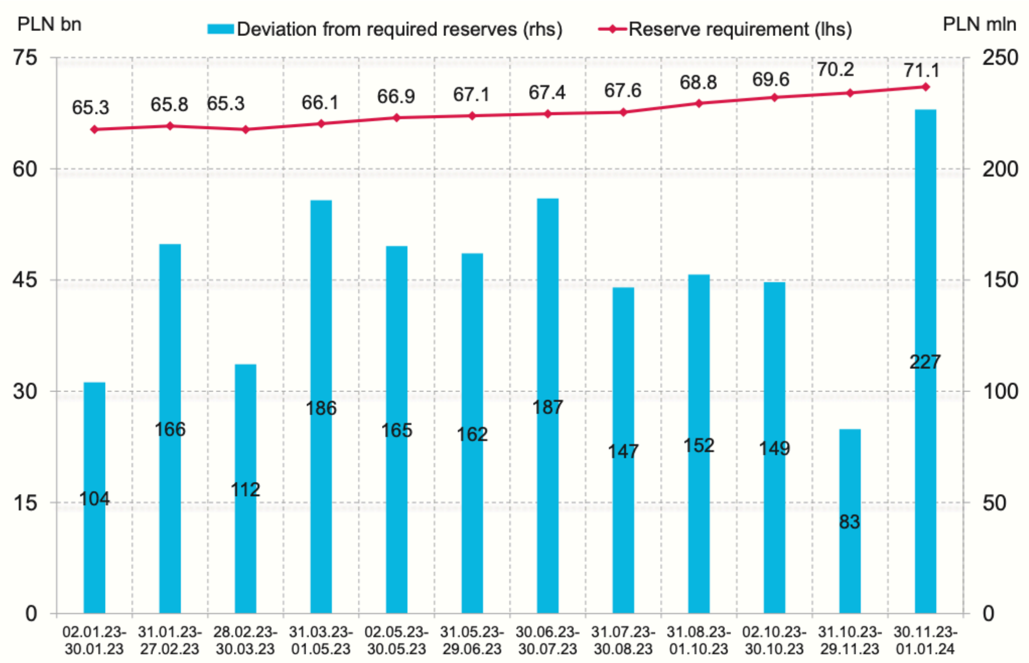
allows all the entities, which are subject to the required reserve system to freely change the total amount of funds that are kept deposited with the NBP, however the "average reserve maintenance mechanism" exercised by the NBP, requires financial institutions to hold the average amount of funds deposited with the NBP, above the required ratio[259].

Following its restrictive monetary policy stance, the NBP, decided to increase the required reserve ratio on financial institutions in 2022, the percentage has been raised from 2% to 3.5%. The economic meaning of these decision was that the financial institution including commercial banks, credit unions, cooperative banks and other, subject to the reserve requirement, have been required to hold over the year 2022, a higher average portion of their deposits collected from various customers, in the form of liquid funds such as quick maturities securities with the NBP. As a result of the elevation in the required reserves ratio, the aggregate amount of reserves held with the NBP have increased by over PLN 30 billion[260].

In 2023, after the changes in the trends of macroeconomic variables, the National Bank of Poland, decided to increase the amount of reserves required from 65.3 billion zloty at the beginning of the year to over 71.1 billion, at the end of 2023, this change was due to a fall in the NBP's reference rate, as well as an increase in the amount of funds in the reserve base[261].

Diagram 32: "Deviation of the average balance of institutions' subject to the reserve requirement accounts kept in NBP"[262]



Source: NBP data.

259 https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

260 https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

261 https://nbp.pl/wp-content/uploads/2024/05/Sprawozdanie-z-wykonania-ZPP-ANG-2023-WWW.pdf

262 https://nbp.pl/wp-content/uploads/2024/05/Sprawozdanie-z-wykonania-ZPP-ANG-2023-WWW.pdf

Interestingly, the convergence from the required reserve amount among the financial institutions, which are subject to it, has decreased, since 2022, meaning that on average, during the maintenance periods, they held larger proportion of reserve required with the NBP, than in 2022, which suggests, an improving liquidity position of banks, compared to the previous year[263].

Foreign exchange operations

Besides the most important monetary policy instruments used by the NBP including the interest rates, standing facilities and reserve requirements, the NBP, has supported their restrictive monetary policy stance in 2022, via operations on the foreign exchange market. Due to a significant fall of value of the Polish zloty, after the outbreak of the war between Ukraine and Russia, the National Bank of Poland had to intervene, since this situation was against the fundamental goals of the monetary policy of "stable currency" and gave a rise to significant problems on the financial market. To strengthen the Polish currency, that is to increase the value of the Polish zloty against foreign currencies, in 2022 the National Bank of Poland has sold significant amounts of foreign currencies for the Polish zloty, on foreign exchange markets[264]. In 2023, the National Bank of Poland did not conduct any foreign exchange swaps, nor trading of the foreign currencies on the foreign exchange market[265].

The monetary policy pursued by the National Bank of Poland in 2022 and 2023, shows that the restrictive monetary policy stance of the NBP, has played an indisputable rule in reducing the record-breaking macroeconomic indicators, which resulted from the Outbreak of war in Ukraine in 2022, but also to some extent, still from the COVID-19 pandemic. Importantly, the war between Ukraine and Russia, has brought wide-ranging consequences on the Polish economy, from rising energy and food prices to the inflow of refugees, trade conflicts, rising safety issues and the accompanied uncertainty economy-wide. These has contributed to a record high inflation rates recorded in 2022 and beginning of 2023. The NBP, by using a range of its monetary policy instruments, including interest rates, open market operation, as well as reserve requirements, intervened to bring the inflation rate as quickly as possible to the defined medium-term target. As of the end of 2023, the inflation rate has dropped significantly to around 6%, together with falling inflation expectations and the forecasts made by the NBP, predicting a fall of the inflation rate to the 2.5 % inflation target in 2024, which actually dropped to 2% in 2024. Undoubtfully the NBP and its quick and decisive actions, have contributed to bringing the inflation rate back to the target and to the stabilisation of the economic condition within the country.

[263] https://nbp.pl/wp-content/uploads/2024/05/Sprawozdanie-z-wykonania-ZPP-ANG-2023-WWW.pdf

[264] https://nbp.pl/wp-content/uploads/2023/05/Report-on-monetary-policy-in-2022.pdf

[265] https://nbp.pl/wp-content/uploads/2024/05/Sprawozdanie-z-wykonania-ZPP-ANG-2023-WWW.pdf

Conclusion

This paper, aimed to prove that the National Bank of Poland, established and operating on the basis of the principles of the market economy and within the framework of the European Union central banking system, was able to accurately diagnose the economic and financial situation of Poland after the outbreak of the war between Russia and Ukraine in February 2022 and make the right decisions in the field of monetary policy. At the same time, the NBP proved to be adequately prepared to operate in difficult and complicated, almost "warlike" conditions that had never occurred before. It should be emphasized that the structures, staff, position and independence of the NBP, built with great effort in the constitutional and institutional system of Poland over the course of over thirty years since 1989, passed a positive test in action, which was attempted to be demonstrated during the considerations. It also seems that the system of decision-making, policy coordination and support for government institutions by the NBP performed well in the face of extraordinary situations, and the Polish banking system passed the test of responsibility and rationality.

The scale of the social and economic challenges for Poland caused by the war in Ukraine and the related need for financial and monetary policy actions turned out to be extraordinary and difficult to estimate at the end of 2021, both in terms of the occurrence of certain phenomena and their scope. Certain forecasts and assumptions made just before the outbreak of the war did not always turn out to be entirely accurate. First of all, the Polish financial and monetary system faced phenomena of both a positive and negative nature, which forced and determined specific actions of the NBP in the field of monetary policy.

Among them, the first phenomenon was the mass influx of Ukrainian war refugees to Poland after the outbreak of the war (approx. 2 million people, over 1 million remained permanently), which had a major impact on the Polish economy both in a positive sense (replenishing the missing hands to work in various sectors of the Polish economy - from industry and construction to tourism and catering services) and negatively - due to the sharp increase in the burden of the state budget with social benefits for refugees, the vast majority of whom were women and small children. The increase in the burden of social spending was, however, compensated by the replenished labor market with a relative, although minimal, increase in Poland's GDP in 2022-2023 after the period of slowdown as a result of Covid-19, and to a much higher extent than in other EU countries.

The second phenomenon that affected the Polish economy after the outbreak of the war and the actions of the NBP, which were highlighted in the work, was related to the energy sector. As a result of the sanctions imposed on Russia by the EU, as well as Poland's individual withdrawal from purchasing Russian gas, crude oil and coal, the prices of electricity and heating increased rapidly for both individual recipients and for companies (manufacturing industry), causing a significant increase in prices and high inflation (over 18%), unseen in Poland for over 20 years. This was accompanied by restrictions and then Poland's withdrawal from purchasing artificial fertilizers, previously imported in large quantities from both Russia and Belarus, which resulted in a sharp increase in their prices, directly affecting the prices of food and other agricultural commodities.

The third phenomenon, both directly and indirectly related to the war and the EU's policy towards Kiev, was the intensification of trade between Poland and Ukraine through Poland. The decision taken by the European Commission to temporarily suspend customs duties on Ukrainian grain and agricultural products in order to support the Ukrainian economy, which was deprived of export opportunities via the Black Sea, has resulted in a sharp inflow of cheaper, but qualitatively inferior, Ukrainian grain products to Poland in 2022-2023. This has significantly disrupted the distribution system for grain produced in Poland and has had an impact on the increase in the prices of food products.

In view of the events and phenomena outlined above in the form of rising prices in Poland after the outbreak of the war, the National Bank of Poland intensified its restrictive monetary policy to address the problem of the fragile economic environment, which was further worsened by the military conflict. It should be added that even before February 2022, Poland, like many other countries, was struggling with rising inflation due to the rebound from the pandemic, rising energy prices and supply chain problems.

After the Russian invasion of Ukraine, inflation increased even more, mainly due to the rapidly rising prices of gas, oil and coal (after cutting off Russian supplies), the related increase in food costs (Ukraine was a key grain exporter) and the weakening of the zloty, which resulted in higher import costs.

In view of the above phenomena in financial and monetary policy, NBP began raising interest rates in October 2021, but accelerated the pace after February 2022. In October 2021, the reference rate was increased from 0.10 to 0.50% and in February 2022 to 2.75%, and in September 2022 it reached the highest level of 6.75%. The aim of such NBP policy was to curb down domestic demand and counteract double-digit inflation. The reference interest rate remained stable at 6.75% for over a year, until the second half of 2023.

In terms of communication and strategy, NBP President Adam Glapiński often stressed at that time that the NBP had to adopt a “hawkish” stance until inflation was under control. Although some inflation was “imported” and therefore could not be fully controlled by monetary policy, it was necessary to avoid de-anchoring inflation expectations, i.e. loss of confidence in the central bank’s ability to bring inflation back within the established limits. Such a target was 2.5% ± 1 percentage point.

The results of the NBP’s monetary policy turned out to be positive after several months. Inflation, which peaked in Poland at 18.4% in February 2023, then began to gradually decline to 8.2% in September 2023. This was possible primarily due to the NBP’s restrictive policy as well as slowly falling international energy prices and the implemented fiscal measures and government subsidies, mainly via the government’s “protective shields”. The side effects of the rising NBP interest rates were lower domestic demand and a fall in consumption. GDP slowed down in the first half of 2023, with growth below potential. In the currency market, NBP interventions and rising interest rates supported the zloty, reducing volatility in currency markets.

The beginning of the NBP's easing of restrictive monetary policy and interest rates began in September 2023, when inflation began to gradually decline in the preceding months. As a result, the NBP lowered the reference interest rates by -0.75% to 6.00% in September 2023, and by -0.25% to 5.75% in October 2023. However, the NBP management maintained a cautious approach, fearing the risk that new geopolitical shocks (Ukraine, the Middle East, tensions with Belarus) could contribute to the stabilization of the inflation, but at a higher, than target level.

In terms of activities related to the management of foreign exchange reserves and market stability, the NBP closely monitored financial markets to prevent excessive fluctuations in the zloty exchange rate and was prepared to intervene if necessary. In addition, it has maintained and maintains an appropriate level of foreign exchange reserves to ensure financial stability. Similar measures include the plan to increase gold reserves announced by the NBP President, aimed at reaching 20% of foreign exchange reserves. The decision was aimed at strengthening the country's financial strength in the context of economic uncertainty caused by the effects of the war between Russia and Ukraine.

In conclusion, it can be stated that through classic and rational, but also extraordinary actions, the National Bank of Poland wanted to mitigate the economic effects of the war in Ukraine, while at the same time supporting Polish financial stability. The monetary policy of the National Bank of Poland after the outbreak of the war in Ukraine and the emergence of unfavorable phenomena in the form of an increase in energy and food prices and, consequently, a sharp increase in aggregate inflation rate had three stages: 1. Tightening monetary policy (until September 2022) in order to stop inflation. 2. Maintaining high interest rates (until mid-2023) to consolidate the progress in gradually reducing inflation. 3. Gradual commencement of normalization (from September 2023) as inflationary pressure decreased.

It should be emphasized, that in the light of the extraordinary "war" challenges and economic phenomena directly and indirectly related to the war in Ukraine, the NBP's policy was focused on credibility and stability in a particularly uncertain geopolitical and economic environment. It also led to a significant reduction in inflation, price stabilization and the return of the Polish economy to an economic growth trajectory as early as the fourth quarter of 2023. Its full effects could be expected to be seen over 2024.

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